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FEBRUARY, 1947

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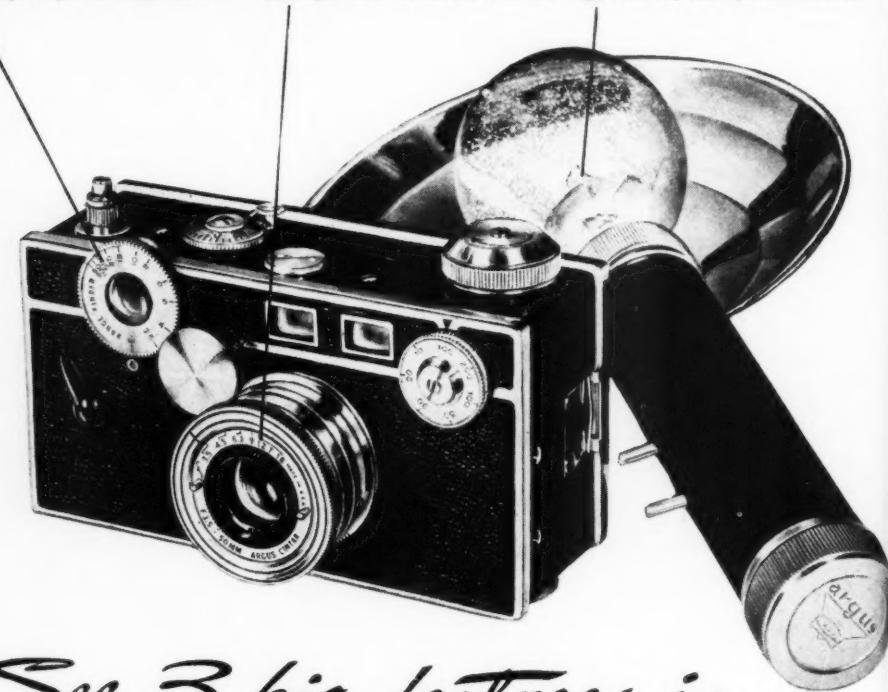




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Minicam Photography

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CONTENTS, FEBRUARY, 1947

Articles

MODEL NIGHT	18
ANSCO COLOR PRINTON	DAVID MACFIE 20
MAHOLY-NAGY	GEORGE S. ROSENTHAL 25
INTERNATIONAL PORTFOLIO—HOLLAND	MOERKERK AND ZOETMULDER 26
AROUND THE CLOCK WITH ALAN FONTAINE	ALAN FONTAINE 38
EXPOSURE-DEVELOPMENT RELATIONSHIP	JOE MUNROE 44
GENESIS OF A SALON PRINT	CLARENCE PONTING 57
THE LONG AND SHORT OF LENSES	MAURICE TERRELL 60
SKI PHOTOGRAPHY	RENE PAYEN 68
GLOSSIES WITHOUT RINGS	GEORGE S. COWLAM 72
MATHEMATICS OF THE TEST STRIP	BEATY L. McDONALD 74

Movie Features

TONING MOVIE FILM	ROBERT HURST 34
MOVIE RELEASES	108

Departments

THE LAST WORD	6
PHOTO MARKETS	14
AXEL'S ANGLES	75
PHOTO DATA CLIP SHEETS	76
CAMERA CLUB NEWS AND IDEAS	84
NEW PRODUCTS	90
GADGETS, KINKS AND SHORT CUTS	104
BOOK REVIEWS	128
SALON CALENDAR	146

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EDWIN BOWER HESSER



Photo by Samuel Wu

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DOES YOUR CAMERA GET THE BEST OF YOU?



By JAMES L. SHERIDAN

1. Even successful photographers find they can gain much from SMP's advanced courses! Before he came to the School, JAMES L. SHERIDAN (above) was an outstanding G. I. photographer in France. Murals made from his photos hang in Government buildings in Paris. Now, his technique perfected at SMP, Sheridan opens his own Photographic Reportage Studio, Westwood, N. J.

2. To fan students' interest in photography, SMP courses are exciting as well as instructive. Top-notch models, professional-type studios and labs help photographic talents bloom quickly, as they did in the case of HAROLD R. WICKHAM (right). An amateur when he entered SMP, Wickham is today a professional free-lance photographer.



By HAROLD R. WICKHAM

3. Give three cheers for SMP's top-flight photographer-instructors! They combine "long-hair" theories of photography with streamlined, practical instruction. Result is evident in professional-calibre work of SMP student BEN KROLL (see left). Kroll plans to return to Canada after his graduation.



5. Information Please! "What about tuition fees?" Specialized courses day or evening, are exceptionally moderate. Visit the School, or write for outline of courses. Address H. P. Sidel, director, Dept. M2.

4. When SMP graduates leave the School, they get ahead fast! Moving up the ladder in typical SMP style is LLOYD G. MASON, (right), who worked in his father's studio before coming to the School, now covers the U.S.A. on an important, new photo assignment.



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136 East 57th St.

The Last Word

Sirs:

All of us here at David White Co. (makers of the *Stereo Realist* equipment—Ed.) congratulate MINICAM on the two-part Stereo article. This article will do much to satisfy the interest of readers who have experienced difficulty in finding well-written and accurate information on stereoscopic work.

When we started advertising the *Stereo Realist* a year ago, we had every reason to believe that we would be able to complete tooling and be in production in the Spring of 1946. Since that time the problems we have been bucking are the same problems that face every manufacturer in the United States. By the time this letter is published, your readers will probably have the opportunity of at least seeing the *Stereo Realist* in some of the camera stores.

Thank you again for the good work you have done in the interests of stereo photography.

J. H. CALDER,
Camera Division,
David White Co.,
315 W. Court St.,
Milwaukee, Wis.

Scoop

Sirs:

Amateur photographers are always interested in keeping up-to-date on the latest equipment, processes, etc., connected with photography—especially those which concern the field of color which is becoming more and more popular each day. Your article on "Stereo" in the December, 1946, issue of MINICAM is a "scoop."

GEORGE BLAHA, President,
Chicago Color Camera Club,
6240 Artesian Ave.,
Chicago, Illinois.

Schwartz, Moncalvo, Bahnson

Sirs:

I have just finished reading "Your Hunting and Fishing Album," by Charles W. Schwartz, in the December, 1946, issue. Schwartz not only did a good job of photography, but the story is so real, you can almost smell the fish frying. A Leica fan myself, I can appreciate his reasons for doing his own fine grain developing—particularly in view of the care one must take to get good enlargements from 35mm. film.

As for Ricardo Moncalvo's picture of a historic castle in "International Portfolio," I am sure any American amateur could have done better with a wonderful subject like that.

A closing thought: when a fellow thinks he knows everything there is to know about photography, he is only kidding himself—read Axel's Angles.

CLIFFORD B. PAUL, APSA, ARPS,
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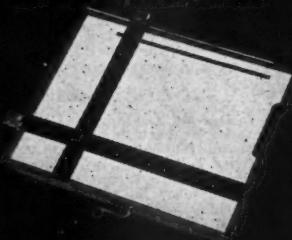
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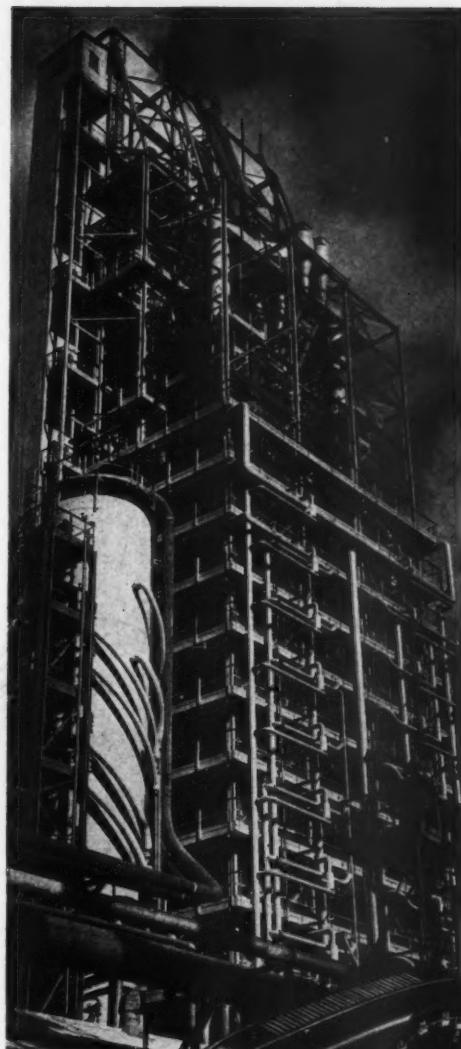
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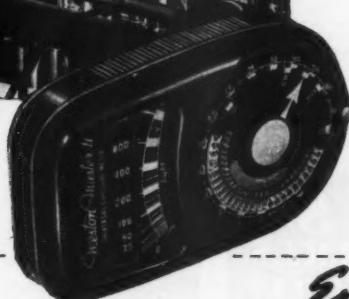


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Sirs.

Your article on Stereo in the December issue was most welcome, indeed. I hope you will see fit to publish more articles on the subject in the future. Since there are a number of the old stereo viewers still in existence, I am wondering if you or your readers can help me locate a new source of stereoscopic paper prints.

W. R. TANNEY,
1082 W. Bridge St.,
Phoenixville, Pa.

Sirs.

I've made better accidental double exposures than the things you call salon pictures and print. You are, however, slowly improving your magazine. The November issue was almost perfect except for the nutty picture on page 57.

ROBERT I. LEVINSON,
2752 Boston Blvd.,
Detroit 6, Michigan.

• Why not let us see some of your accidents?

Sirs.

This is "Nicky" who may be a part Spitz, part Collie mongrel by birth, but who is a No. 1 dog to me. I took a full length picture of Nicky with a 2 1/4 x 3 1/4 press type camera, but when I was asked to make an 11x14 enlargement of just his head, I had a problem. My 4-inch enlarger lens would not bring the head up to the desired size, so I slipped a Series VI Portrait attachment over the lens. That dood it!—and now the finished picture is hanging over the fireplace.

N. B. HENDRICKS,
Sylvan Lake,
Alta., Canada.



"I Started My Photographic Career When I 'Hit the Beach' at Normandy!"



by *Sal A. Nalbone* *

"Unbelievable as it may seem, it was when we headed toward the shore on momentous D Day, that I resolved that if I were lucky enough to get through alive, I would turn my hobby into a profession.

"After my release from the Service, I enrolled in New York Institute of Photography and actually began to earn money doing free lance photography before completing the course.

"Immediately upon graduation, I went to work as dark room technician for Look Magazine. I have already started to do some staff work and the prospects of my becoming a staff photographer soon look very bright. I'm truly grateful to the N.Y.I. training that made it all possible."

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Like ex-Staff Sergeant Nalbone, hundreds of successful N.Y.I. graduates found photography so fascinating as a hobby that they determined to make it their life's work. Others were intrigued by its thrilling opportunities, even though they were still in the "snapshot" stage. But, no matter how much—or how little—experience they had, all realized the need for professional training.

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*From a letter dated Sept. 12, 1946.
All Photographs on this page by Sal Nalbone.

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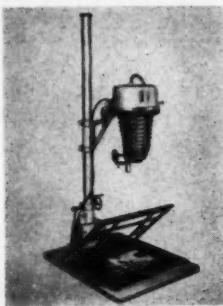
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20-20 Hindsight

Sirs.

After reading the paragraph on 20-20 Hindsight in the December Camera Club column, I dug down into my collection of negatives and made up this print. My equipment was a Baby Brownie Special and the negative was tray developed in MQ developer in a candy tray.

JEFF KITTELL,
1516 Vyne St.,
Prescott, Ariz.

Blue Toning Query:

Sirs:

In the December issue of MINICAM, on page 3 of the article by Ward Pease on blue toning, it is mentioned that you should use a "dram or two of 28% acetic acid, or 4 drams of 10% acetic acid. Should this be added to the final solution, or the original solution?

PETER C. JUNG,
621 First Street,
Menasha, Wis.

Ward Pease's Answer:

Sirs:

The acetic acid goes into the final solution—the working, diluted solution. The addition of the acid is the last step before introducing the prints.

D. WARD PEASE,
Chicago, Illinois.

Print or Negative?

Sirs:

I have an Ansco 620 camera with the synchronized detachable unit. In order to sell photographs, should the print or negative be sent to publishers? Are photographs made by amateurs welcomed by publishers?

MARCOS A. PALOMO,
1115 Durango,
San Antonio 7, Tex.

- Glossy prints no smaller than 5 x 7" (8 x 10's are preferred) should be submitted to publishers. Do not send in negatives unless they are requested. Good amateur photographs are as welcome as professional work but they must be *really* good.—Ed.

(Continued on page 120)

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PHOTO MARKETS

Compiled by MAY SULLIVAN

The Crowell-Collier Publishing Company, 250 Park Avenue, Publishers of *Collier's Weekly*, *The American Magazine* and *The Woman's Home Companion* are in the market for picture stories and cover subjects. Their color requirements are: Ansco—B 2 size and larger; Kodachrome $2\frac{1}{4} \times 3\frac{1}{4}$ and upward. On all unsolicited material, Crowell-Collier asks that return postage be included. Payment is made on acceptance of material.

Free Lance Photographers Guild, Inc., 219 East 44th Street, New York 17, New York, soon to celebrate its tenth anniversary, is prepared to act as agent for several outstanding color specialists. They are interested in hearing from photographers of unusual talent in the following specified color fields; cover girls, babies and children, animals, sports and farm photography.

Columbia Newsphotos, 60 East 42nd Street, New York 17, New York needs photographs of news, semi-news, and feature material in single shots and sets. Animal pictures, how-to-do, scientific developments, oddities in the news and science, rotogravure material, good scenics, foreign pictures, fashions. \$3.00 to \$10.00 is paid for accepted black and white photos, and \$25.00 to \$100.00 for Kodachrome. Color contributions must be 4x5 and of best quality.

McGraw-Hill Publishing Company's magazine *Electrical Merchandising*, 330 West 42nd Street, New York 18, New York buys pictures of electrical home appliances sold in retail and wholesale firms—interior and/or exterior. New appliance departments in department stores. People in appliance world; conventions, exhibitions. Payment is at the rate of \$3.00 and up, and black and white only is desired. Please include return postage.

The Far East Magazine, Milton, Massachusetts, is interested in 8x10 glossy prints of Burma, Philippines, Korea. Preferably close-ups, or shots of natives at work. Their rate of payment is \$3.00 for each accepted photograph, and they ask that contributor include return postage.

The National Geographic Magazine, 16th and M. Sts., N. W. Washington 6, D. C. requires for publication black and white and natural color photographs showing artistically and naturally the physical characteristics of every country and the manners, customs, ac-

tivities and costumes of every people. A most important requisite of the picture is pictorial effectiveness obtained through careful attention, in treatment of subject, to composition and arrangement. Whenever possible photographs should include people, preferably in action. The size of the original negative is unimportant so long as a sharp, clear print without grain is obtainable from it. Generous rates are paid for photographs upon acceptance, but these prices vary widely due to the conditions under which the pictures are made and acquired. Full information must accompany each photograph. Prospective contributors should make a careful study of several issues of *The National Geographic Magazine* and analyze pictures already published.

Brick & Clay Record, 59 E. Van Buren St., Chicago 5, Illinois, requires sharp, contrasty prints, professional in tone. They are interested in new construction on all types of buildings. These buildings should preferably be built in the last five or seven years and be constructed of brick, structural clay, tile and terra cotta. Not interested in photos of incomplete buildings. If you have a series of pictures on a particular building, so much the better, for they are perfect for page units or double spreads. Whether the pictures have been published before does not matter. On all pictures you should include explanatory information, giving the names of the architect, mason contractor and the manufacturer who supplied the brick. Also, if you submit a residence picture, they would like a copy of the floor plan. This publication prefers sharp, contrasty black and white glossy prints 4"x5" or larger. And, they are not on the market for color shots at this time.

Junior Joys, published at 2923 Troost Avenue, Kansas City 10, Missouri are asking for pictures of children in various play and church activities. No color—just black and white glossies. Payment is made on the basis of \$3.00 to \$5.00 depending upon the picture. Please include return postage.

Western News Service, P. O. Box 7247, Los Angeles 37, California announces that they have openings for free lance photographers in the following cities: Portland, Oregon; Seattle, Washington; Fresno, California; and San Francisco, California. They need photographic reporters who are capable of shooting photos of retail and whole establishments.

(Continued to page 119)



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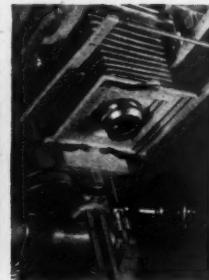
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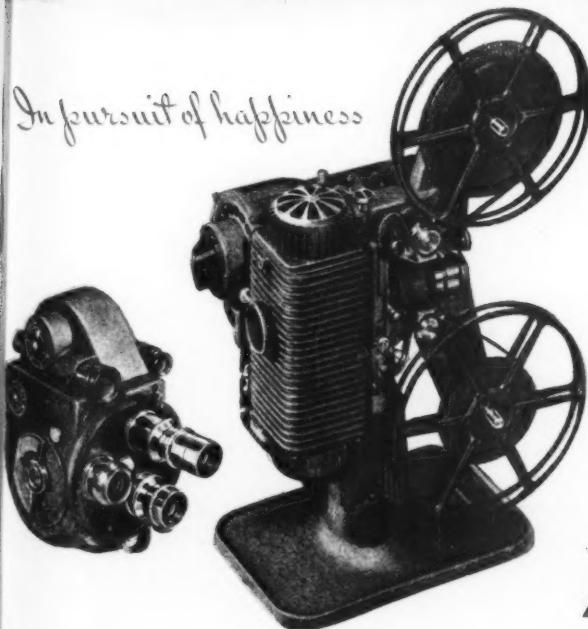
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MODEL NIGHT

IS AN INVITATION TO COLOR



*"Wood Carver" by Dr. I. W. Schmidt
"Cossack Girl" by Douglas H. Wanser
"Experimental Color" by Les Tirschel*

ART, from time immemorial, has been based upon the nuances of illusion. Whether in his own home, or on "Model Night" at the camera club, a photographer's "Open Sesame" into the world of make-believe is often a model and a handful of costume props.

What kind of characters he creates, how he interprets them in black-or-white or in full color, and how he chooses to present his work is up to him. Not too much deference should be paid those who object strenuously whenever a picture of a lawyer in a tramp's clothing is labeled "Hobo." If the champions of absolute "truth in *all* photography" were to follow their reasoning to a logical end, everything from ancient sculpture to modern movies would be objectionable on the basis of being



unreal; i. e., illusionary. Was not the Venus di Milo a composite of many women? Are not all paintings of Christ based upon creative imagination blended with anatomical drawings of men who lived centuries later? Are the thunder of hooves and warbling of birds in our symphonies more than musical interpretation in the medium of sound? If these things be true, then the photograph of a lawyer in hobo garb is a photographer's interpretation of either a character or a way of life. It can be a good interpretation or a

poor one, but whosoever protests the title as an imposition upon his intelligence must protest the illusionary qualities of all other arts as well.

Wood Carver, as a picture, is not necessarily enhanced by the fact that carving chanced to be one of the hobbies of Rudolph Hazen, the model. Any other activity which Hazen could perform with naturalness might have served equally as well for the "character" portrait theme.

(Continued on page 141)

how to improve your

ANSCO COLOR PRINTON

by Dave Macfie

HAPPY DAYS are ahead for photographers who have yearned for a simple, convenient way to produce full color prints at home. The new Ansco Printon offers just that—a simple, convenient way to make color prints from color transparencies in *your own darkroom*. No separation negatives are required, and there are no registration problems to contend with. Printons can be made with a single exposure.

What Is Printon?

Printon is a material designed for making full-color contact prints or enlargements direct from color transparencies. Although some loss of color is inevitable in all color-printing methods, any good, clear color transparency should produce a good color Printon. Printons are viewed by reflected light the same way a black-and-white photograph is viewed.

The base material for Printon is a safety film base containing a pigment which renders it both white and opaque. This type of support stands up well under treatment which would have adverse effects on ordinary photographic papers. Three different light-sensitive emulsions are coated on the opaque white base. These emulsions, which are sensitive to blue, green, and red light, form the dyes of their respective complementary colors upon reversal processing. The complementary colors from the top layer to the bottom are: yellow, magenta (blue-red), and cyan (blue-green).

The Cost of Printon

Printon comes in packages, usually 12 sheets to the package. The size of the

sheets range from 4 x 5" up to 8 x 10", and the cost varies from approximately 23c per sheet for the smaller size up to 86c per sheet for the 8x10" size. Printon chemical kits containing the seven chemicals required for processing Printons cost \$2.20. The seven chemicals included in these kits are: first developer, short-stop, color developer, sulfate rinse, hardener, clearing bath, bleach, and fixer.

Color compensating filters, which we shall discuss fully later, come in packaged sets of 11 filters. These range in price from about \$3.30 per set for the 3 x 4" size up to \$8.25 for the 8 x 10" size.

Very little additional equipment is required to convert your present darkroom to the needs of home color processing. Any standard enlarger may be readily adapted, and the few extra trays (or tanks) may be easily obtained.

How Printons Are Exposed

The most convenient method for making full color prints is by exposing with an ordinary condenser or diffusion enlarger light source. Contact Printons can be made by inserting the transparency and the sheet of Printon in a contact printing frame, emulsion to emulsion, and then exposing with the enlarger light. Large color prints are made by following the same enlarging technique used for black-and-whites. The enlarger light source is recommended because the color quality of the exposing light source must be balanced to the particular Printon emulsion being used. By means of color compensating filters added to the optical system of an enlarger, it is a relatively simple matter to balance the light source



RELATIVELY FLAT transparencies which contain brilliant hues but no great contrast between highlight and shadow area is the safest bet for good quality color prints. Photo by Constance Bannister.

for Printon. Once the basic color balance has been achieved there is no need to change it so long as Printon of the same emulsion number is used.

How To Adapt An Enlarger For Printon

Three things are essential in making Printons with an enlarger light source. First, you will need an enlarger lamp which burns at about 3,000 degrees Kelvin. (A G.E. No. 212 enlarging lamp is excellent for this purpose.) Second, you will need an Ansco UV-16P filter and, third, a piece of heat absorbing glass. All other changes and minor adjustments of the enlarger light's color balancing qualities will be made through the use of color compensating filters.

If your enlarger is already equipped with a heat absorbing glass, the disc you have will probably be satisfactory. Otherwise, heat absorbing glass can be purchased from your camera dealer. The glass must be the right size to be inserted be-

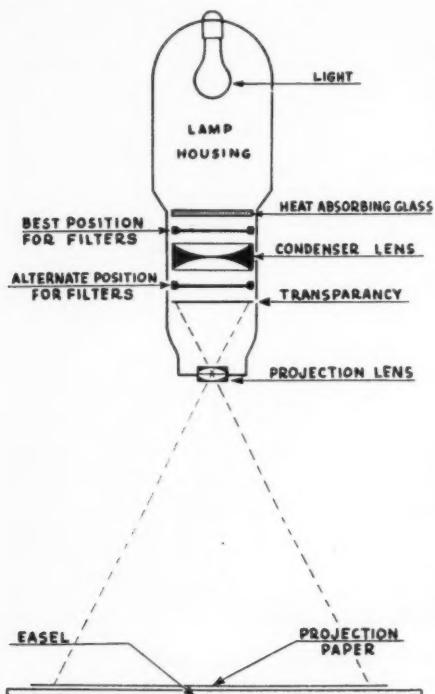
tween the light source and the enlarging lens. (See diagram.) Heat absorbing glass ranges in cost from \$1.50 for a sheet $3\frac{1}{2}$ " in diameter to \$3.00 for a sheet $6\frac{1}{2}$ " in diameter. It is also available in rectangular form from 4×6 " to $10\frac{1}{2} \times 12$ ".

The UV-16P ultraviolet absorbing filter should be fitted under the heat absorbing glass but *not* in contact with it. The air space between the heat absorbing glass and the filter protects the gelatin foil from being subjected to the high temperatures which the glass itself may reach. The filter can be kept away from the glass by any means that suggests itself — by small blocks inserted between the glass and the filter, or by cutting out a circular cardboard shim $\frac{1}{4}$ " or $\frac{1}{2}$ " wide and inserting this between the glass and the filter. These two elements, once installed, are standard for all Printon exposures and need not be changed.

Making Test Exposures

You will notice that the label on the Printon package bears in the lower right-hand corner such numbers as, 1-23, 1-34. These numbers simply designate the Ansco Color Compensating Filters which should be used in the optical system for test exposing the Printon in that box. Thus, 1-23 means one yellow color compensating filter No. 23, and 1-34 means one magenta color compensating filter No. 34 are called for. It should be remembered, however, that the recommended filtration printed on the package labels serves only as a starting point for subsequent tests which may be necessary. This is because of individual differences which exist between optical systems. For instance, some reflectors are more efficient than others, voltage from electric outlets vary, and so on over a field of uncontrollable influences on light quality.

Each package of Printon contains test strips to be used in determining the correct exposure. When the recommended color compensating filters have been placed beneath the heat absorbing glass next to the standard UV-16P filter, you





DON'T DESPAIR of getting a good quality color print when your transparency is more contrasty than it should be. Try printing through a single or double mask as described on page 139.

are ready to expose a test strip. With the transparency in the negative carrier or printing frame, and the test strip on the enlarging easel, one small area of the test strip is given approximately the same exposure that would be given a sheet of bromide paper without filters. The rest of the test strip is then exposed in small areas receiving 2, 4, 8, and 16 times the original exposure. When the test strip has been processed, color balance is checked by visual inspection. Needed corrections can easily be determined by viewing the test strip through different color compensating filters. The filter, or filters, which give the test strip the correct color balance are then added to the optical system in the enlarger.

In adding filters to the optical system it should be kept in mind that a color may be *increased* by subtracting its oppo-

site (complementary) color, and vice versa. In other words, if your test Printon shows an overall magenta cast, the proper procedure would be to add equal amounts of yellow and cyan to your filter combination *if no magenta filter is already present in the enlarger*. If, on the other hand, a magenta filter (of which there are four in each set, differing only in intensity) is already employed, the magenta cast can be decreased by using a lighter filter to remove some of that color.

After preliminary corrections have been made, the enlarger light system should contain color compensating filters of no more than two colors.

Processing The Printon

The processing of Ansco Printon is very similar to that for Ansco Color Film. Both

are reversal processes, and both may be carried out in white light with the exception of the initial (first) development and short stop which require only 15 minutes. The reversal process is not much more difficult than the ordinary negative-positive process for black-and-whites. It involves only a few extra steps, including second exposure and bleach, and the complete procedure can be carried out in 90 minutes. Temperature control is quite important, particularly during the first development and the color developing. Since eight solutions are used, nine trays or tanks should be used for maximum convenience. Printon development can, however, be carried out with only three trays made of stainless steel, glass, enameled steel, or Bakelite. When solutions are to be stored in tanks, stainless steel should not be used for the bleach bath.

Color processing, in the final analysis, is only a matter of carefully following directions, and the thrill of seeing your own sparkling print come out of the fixer more than compensates for the accurate processing it demanded.

Choosing The Transparency

Naturally, the most pleasing Printons are obtained when particular attention is paid to transparency selection. Excellent results are obtained by printing from relatively flat transparencies which have a variety of brilliant hues but no great contrasts between the highlight and shadow areas. This means that the best illumination for the camera exposure of the color film to be used in making Printons is front lighting, or sidelighting in which the shadows are well lighted by supplementary flash or reflectors.

If you happen to have contrasty transparencies which you are anxious to print, however, a technique for condensing contrasts known as "masking" can be an invaluable aid.

What Is Masking?

Masking, as its name implies, is simply a matter of covering up the highlight regions of your more contrasty transparencies. The reason for masking is primar-

ily due to the fact that a transparency is viewed by *transmitted* light, while a color print is viewed by *reflected* light. This difference in viewing, along with other contributing factors, shortens the brightness range of any color print on any opaque medium by approximately 15 times as compared with the brightness range of its parent transparency! Thus you can be certain that your transparencies have a brightness range about 15 times longer than the reproducible scale in a color print. Will these ranges fit?

The answer, of course, is that they will fit at one end, in the middle, or at the other end. But for the same reason that you can't put a size 5 shoe on a size 11½ foot, you may select and reproduce accurately from just *one* of the following: the lighter areas, the middle tones, or the shadow regions.

Obviously the whole problem boils down to that of shortening a transparency's brightness range to match Printon. This tailoring is easily accomplished by contact printing the transparency onto negative material. The resulting product, a negative mask, will have its greater densities over the lighter areas of the transparency, and the whole effect will be that of condensing the transparency's brightness range for greatly improved color prints.

The Single Mask

Panchromatic negative film is well suited for making single masks. First, the transparency is inserted into the printing frame emulsion side up. Then three or four unexposed, fixed-out sheets of film (or clear film base) are placed on top of the transparency. Last, the sheet of film which is to produce the negative mask is placed on top, emulsion side down.

The printing frame can be placed on the enlarging easel and exposure made with the enlarger lamp. It is impossible to state definitely what exposure time is best, since variations in enlarger lamps, reflectors, and optical systems all influence the element of time. With a GE 212 lamp at 110 volts, heat absorbing glass

(Continued on page 138)



MOHOLY-NAGY

GEORGE S. ROSENTHAL

BY GEORGE S. ROSENTHAL

MOHOLY-NAGY was a bubbling pot, a man of infinite energy and imagination. As head of the Institute of Design in Chicago, Moholy was teacher, painter, worker in woods and metals, photographer, and custodian of the great German art development, the Bauhaus. The Bauhaus idea was an effort to bring modern design to mechanical products. Examples: Silex coffee pots made of pyrex, metal porch furniture supported by beams instead of legs, and light fixtures that reflect light up.

Moholy-Nagy, contributing editor of *MINICAM PHOTOGRAPHY* died November 25, 1946. The Chicago Daily News said editorially:

Death of Lazlo Moholy-Nagy deprives the world of art of one of its foremost "moderns." He was a great educator, and a leader in the movement to relate the imaginative genius of modern art to the machine age, and to mass production of objects that had both utility and beauty.

He was described at various times as one of the few modern men in the world, and as a man years in advance of the times. Certainly he was far ahead of his times in overcoming the cultural lag between contemporary thought and the machine age.

The whole thing began for Moholy in the last war. Marooned in the Hungarian Army as an artillery officer, Moholy, out of sheer boredom, drew pictures which he sent home. These sketches, unlike his later work, were realistic and showed a facile hand for one who was entirely self-taught. Discharged from the army at the end of the war Moholy went to Berlin and came in contact with the Russian painter Maleovitch whose work was a great impetus in a new artistic direction. Maleovitch painted abstractly and rarely included a recognizable form. The theories of art that make this type of painting palatable are rather ineffectual if you don't like abstract art. Abstract painting never tells a story or relates an episode. It is like enjoying the song of the birds. Moholy was attracted to abstract painting because he believed he saw in it an attempt to analyze light. The problem of light forever haunted Moholy, and accounts for his amazing contributions to the arts. To solve the problem of repre-

(Continued on page 143)



INTERNATIONAL PORTFOLIO

AMERICAN AMATEUR photographers, taken as a whole, have been described at times as self-satisfied gadgeteers—worshipers of German optical equipment who believe that the sun of amateur photographic achievement rises in New York and sets in California. As for sharing the cultural heritage of photography

with fellow amateurs in other parts of the world, the American fan is a provincial isolationist. So say some critics.

We don't believe them. Aside from our own creative initiative, America owes much of her greatness to the capacity of her average citizens to accept and improve upon ideas regardless of the creed, nation-

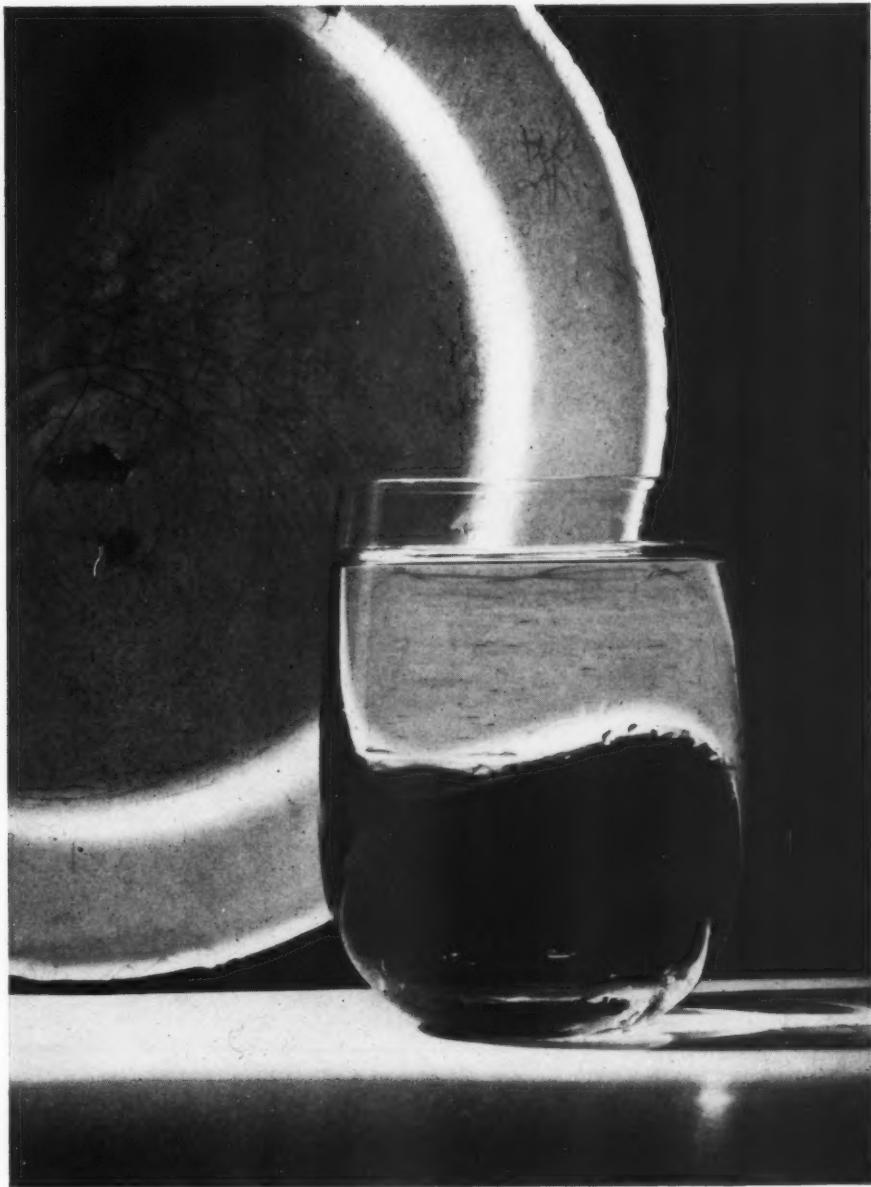
← STEEF ZOETMULDER

J. M. MOERKERK





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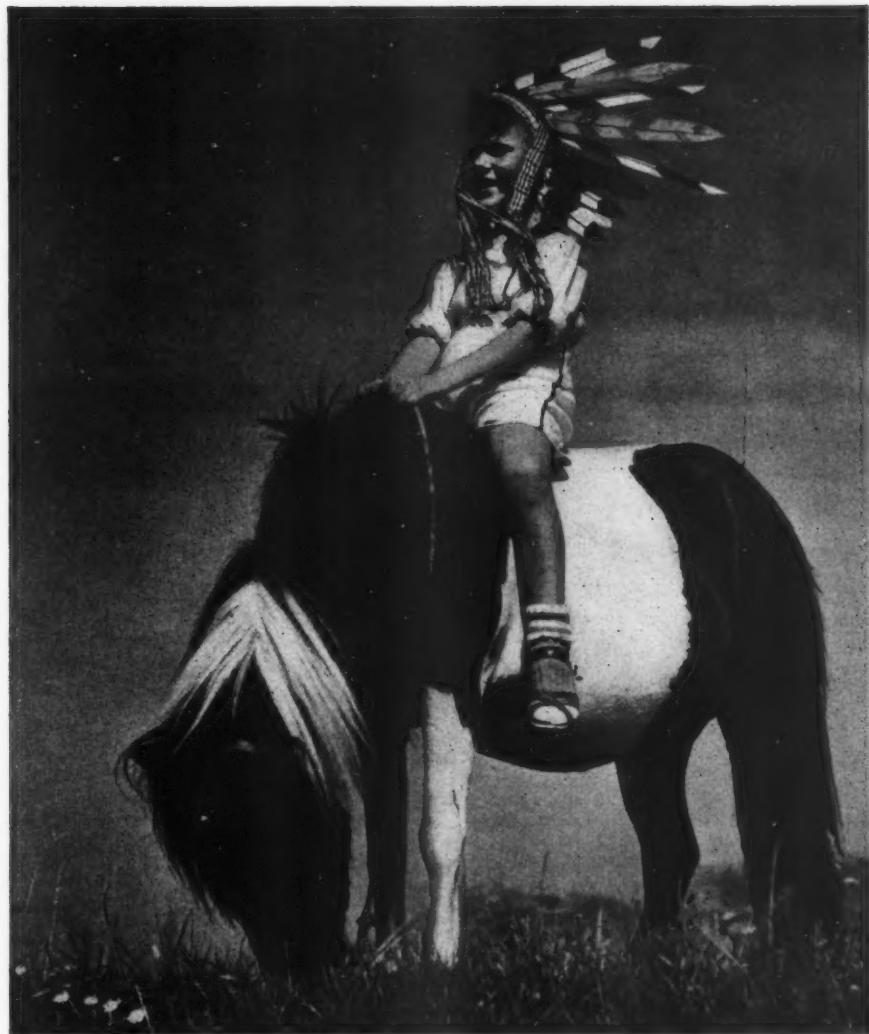


J. M. MOERKERK

ality, or political beliefs of the people who originally spawned the ideas. This, we believe, goes for photography as well as for any other art or science.

To test our convictions, we introduced, in the December, 1946, *MINICAM*, the work of two Italian photographers—Invernizzi and Moncalvo. The response to the first International Portfolio, the re-

quests for more portfolios of amateur work, has constituted a "lift" for everyone concerned with the portfolio idea. So, without further ado, here is a fleeting glimpse of the photographic ideas of two hard-working Hollanders: Steef Zoetmulder of Schiedam, and J. M. Moerkerk of Zaandam. Because of the insight it gives into the problems confronting an



J. M. MOERKERK

amateur photographer in Holland, we are publishing a letter from J. M. Moerkirk which accompanied his pictures. Rather than destroy the personality of the letter by correcting minor errors, we are publishing it verbatim.

Gentlemen:

Your recent letter came to hand and enclosed you'll find some photos, all made by

me with Rolleiflex with cine-film-equipment, on Agfa (Ansco) 35mm film. If you would like some of these pictures, I'll send more of them afterwards. I urgently request you to send back these photos as soon as you have used them, for we could not buy bromide-paper here in poor Holland during the last five years and I have fully run out of supply.

During the years of war I daily was in the big and modern Rotterdam-Zoo and it was there, that I took over 4000 pictures of vari-

ous animals. I wrote a book about life "behind the curtains" in a Zoo, which will appear this year in Holland. It contains—in my humble opinion—60 very good full-page illustrations and moreover about 200 very interesting pictures of animals and the Zoo. All photo's are provided with letterpresses; the manager of the Zoo wrote a foreword and the editor expects the book to be a "best seller." I not only wrote the text and produced the photos, but also I cared for the typographical lay-out and I designed the cover.

The copies of *MINICAM PHOTOGRAPHY* you sent me, came duly to hand and I enjoyed the contents of them very highly, at most all about camera's and supplies obtainable in the U. S.

J. M. MOERKERK

Here in Holland there have been no camera's for sale during 5 years and I am longing for the news from U. S., now that Germany, our largest supplier before the war, has run out of market.

By the way: good smoking-mixture is not for sale here too. Many of my country-men are so lucky to have relations in the U. S., sending them something to smoke in due time. Alas, I am not so lucky and if you could send me part of my honorarium in the shape of smoking-mixture, you would oblige me very much. Who knows, I get a good inspiration from it for good pictures for *MINICAM PHOTOGRAPHY*!

J. M. MOERKERK, Zaandam, Holland.

STEEF ZOETMULDER ➔





TONING movie film

by Robert Hurst

NOW, thanks to low-cost, prepared color toners, any movie fan can easily add brilliant color to his black-and-white home movies. These Edwal Color Toners, available in concentrated liquid form which are prepared for use by the addition of tap water, provide a means of coloring movie film without the use of a darkroom or any special processing equipment beyond the simple reel described later on in this article. In addition, any camera fan can be sure of good results as no experience is necessary to use these colors. Containing brilliant aniline dyes, these color toners actually "plate" the color onto the silver particles to make a permanent job. Because of this "plating" characteristic, movie films that were made some time ago can be colored just as successfully as ones just completed.

Let us examine these color toners and see just how we can use them to advantage in our work. Here is a typical example: Suppose we have an opportunity to go sailing with some friend who has a boat. Assuming we cannot obtain color film (or more likely that our budget will not permit us to use it), we load the camera with some good black-and-white emulsion, knowing full well that we will lose most of the appeal of the picture when we see it projected in drab shades of gray. The brilliant blues of the water and sky, the darker shades of the distant shore, as well as the pale pastel hues of breaking waves and foam from the boat's wake, will all fail to show on the film when we project it for our friends. All is not lost, however, as if

we stop in the local photo shop and pick up a bottle of Edwal Blue Color Toner, we can easily convert these dull, lifeless scenes to shots with a brilliant scale of blues from the deepest indigo to the palest powder shades. The unsuitable gray tones will be transformed to beautiful blues typical of a day on the water. And the whole process is so inexpensive (a 3-ounce bottle of toner which will tone several hundred feet of film costs 65c) and so ridiculously simple. All you need do is—hey, we're getting ahead of our story. Let's first look at a few more uses for these toners before we describe how they are used.

Autumn woodland scenes, for example, appear to best advantage in green and warm brown. The splendor of a sunset may be recaptured by toning such scenes with a combination of brown, red and magenta colors. Edwal Color Toners are unique in that all colors with the exception of the blue may be combined and blended in the toning bath to produce highly original shades. When you consider that they are available in brown, blue, green, red, yellow and magenta (a brilliant purple), you can readily see that all the colors of the rainbow are at your instant disposal. Other suggested uses are: Deep blue, magenta or green for scenes where you wish to simulate night action, soft shades of rose or brown for children, bright red for fires, sunsets and scenes where you are trying to introduce drama.

Remember, however, that these color toners will not give effects like actual color

MOVIE FEATURE

film where a red house will appear red, a green tree green, a yellow dress yellow and a blue sky blue all in the same scene. The entire scene will appear in a single color (the toner selected) although the original black and white gradations of the scene will be followed faithfully in color. Thus if green toner is used, a heavy clump of trees appearing almost black originally will now be a rich dark green, lighter bushes that were gray will now be light green and the grass which may have appeared almost white will now be a very pale green. Clear portions of the film which were transparent originally will remain that way as these colors will only stick to silver—where there is none on the film there will be no color after the toning is completed.

This, you can see, is a great advantage. The opacity of your film is not increased and thus when projected it will not ap-

pear less brilliant in color than it was in black and white. On the contrary, toning has a slight tendency to lighten the image so that when projected it is even more brilliant. This is important as, in certain cases, projector illumination is not too good and anything that tends to cut down brilliance is a serious drawback.

Another use of these color toners is for title work. Titles may be shot on black-and-white film, toned appropriately, and then spliced into Kodachrome reels. This can result in a considerable saving because of the substantial difference in price between black-and-white and color film. Remembering always that the colors will attach themselves only to the shadows or black areas of the film and leave the highlights or clear areas unstained, you can vary the coloring of titles in many ways. For example: White letters on a black ground can be changed to white letters

SUNSETS can be re-captured in most of their glowing beauty by toning with a mixture of brown, red, and magenta colors.—
Photo by Harold M. Lambert.





THE PUNGENT odor of the smithy suggests brown toning which imparts a homeliness and good-fellowship—a chestnut tree, leather, and dust-haze atmosphere to the scene.—*Photo by Harold M. Lambert*

on a red, blue, green or magenta ground. Conversely, black letters on a white ground may be modified so that the letters appear in color with the same white background. If this background is gray it will pick up a little color; thus if blue is used you will have dark blue letters on a light blue ground.

Now let us see how these toners work and actually tone a length of film. To prepare the toning bath, add one part of toner right from the bottle to 16 parts of ordinary tap water. In other words, one ounce of toner to one pint of water. Distilled water need not be used unless the local supply of water is very heavy in iron, which can cause the film to become spotted. The resulting bath, at a tempera-

ture of about 70° F., may be poured into a porcelain tray or some similar non-metallic container. Glass, hard rubber or plastic are all suitable, but a chipped tray where the metal is exposed should not be used. In case you have no such darkroom trays, use a small roasting pan (not iron) or mixing bowl as the colors are easily washed out when you are finished. These are aniline dyes, however, so take care that dishes are thoroughly washed if they are to be used for food. The toning bath is now ready for use.

For a starter, select a short length of 8 or 16 mm film (about 2 or 3 feet) and immerse it directly in the toning bath. Usually toning will commence immediately and you can actually see the color

ACTION, drama, and suspense—all these are heightened and the spectre of tragedy added when you tone your fire sequences in vibrant red hues that grip the imagination.
—Harold M. Lambert
Studios photo.



transformation in 2 or 3 minutes. The length of time in the toning bath determines the depth of color. Overtoning—10 minutes or longer—will have a tendency to produce chalk-like unpleasant tones and should be avoided. If you tone for a minute or two and find that you have not picked up enough color, you can always go back into the toning bath to darken the shade, so for this reason, until you are familiar with the process, seek to undertone rather than overtone.

At this point I should mention that certain films are coated with a protective lacquer by the manufacturer. This lacquer will sometimes inhibit the toning process when toning is attempted. These coatings are usually soluble in carbon tetrachloride,

acetone, etc., but to be safe, write the film manufacturer and ask what solvent you should use to remove the particular lacquer he uses.

After toning has reached the desired shade, remove the film from the toning bath and immerse it in clear running water at a temperature of about 70° F. for from 5 to 15 minutes, depending on how long it takes for the highlights or clear areas of your film to wash clear of color. Soon you will notice that these portions of the film are becoming clear again, for the color will stick only to shadow or dark areas of your film. Wash long enough so that highlights are free of color unless from an artistic standpoint

(Continued on page 114)

AROUND THE CLOCK

INSPIRATION IN WORDS AND PICTURES BY ALAN FONTAINE

RECENTLY, I submitted some photographs of the sea and rocks to a magazine, and they were rejected. The letter accompanying the rejection explained that I was known to most readers as an "experimental" photographer and these straightforward photographs were out of "my line." Normally, rejections don't send me into fits of hysterics, but in this case the reason for the rejection was amusing, and significant. There is a remote possibility that the shots would have been accepted if I had submitted a group of studies in which solarized girls' heads protruded from reticulated drift wood, and vice-versa. In other words, the eternal pigeon-holing of our age was at work; I have become identified with a type of approach in which the photographer is constantly double exposing, solarizing, and putting paprika in the developer. Frankly, I was trying to get away from all the tricks and intricate techniques. Breathing a little fresh air is a wonderful experience, and you should "breathe fresh air" in photography as well as in life. It acts like a tonic; you'll find that when you return to your original work, there is a much more rapid development of ideas.

Diversification of interest has this effect: it is a replenisher for a stultified point of view. All you have to do is to think back to the Renaissance when Michelangelo and Leonardo both offered their services as painters, sculptors, architects, engineers, and a few other trades which happen to elude me at the moment. In photography you might take a look at the varied approaches of men like Will Connell in

Hollywood, and Cecil Beaton in London. The latter became the chief photographer for the British government during the war. His documentary studies of London after the "blitz," are a monument in this type of reporting. Before the war, Beaton was one of the most imaginative fashion photographers in the world. Just how much of a relationship exists between his work in these widely separated fields is difficult to say, but there is certainly some interaction. The visual patterns of destruction often have an affinity with the design and composition of an artificially contrived studio photograph.

Returning to the subject of "pigeon holes," I was suddenly struck with the idea of showing how a photographer could vary his style and approaches several times in the course of a day. He might wake up in the morning feeling in a completely literal frame of mind and end the day in a completely fantastic frame of mind. There might even be a number of vacillations during the day. Monday might be a complete blank.

The photographs accompanying this article were done on a day beginning in the literal manner. Just as a musician might begin his day by practicing scales, or a boxer by jogging several miles, I decided to do an "exercise" with light. Several years ago, a fellow photographer gave me some prisms and lenses, and I have found these to be wonderful media for working with lighting effects. In photographing "around" the subject it is possible to get a better idea of its characteristics.

Simplicity in the use of sources was a

WITH ALAN FONTAINE

condition that I imposed in this study; one 500 watt spot and one reflector were to be used. In this manner you are certain to eke out the last bit of efficiency from the sources. There is a great temptation among photographers to "solve" problems by adding lights to the set. When you consider the fact that some of the best photographs in the history of the subject were made with sunlight, it must seem logical for a photographer to try to get similar effects by the use of one source. I'm not saying that everything has to be approached in this manner, but in a study of this type, there are definite benefits.

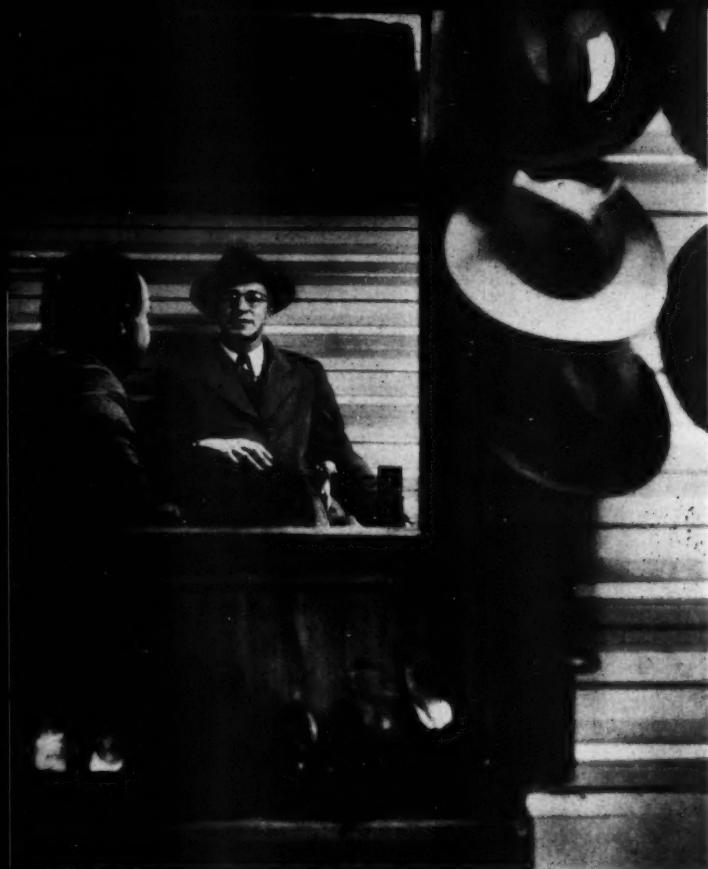
After placing the spot behind the set-up in a raised position, I started working on the composition. The two prisms and three lenses were placed on a piece of white cardboard and the camera was raised to a position that insured an adequate depth of field. Composition is a subject that defies any short analysis; in this particular case, I was after a pleasing arrangement between the elements and one that would give the best refracted and reflected lighting effect in the lenses and prisms. In this

procedure balancing the whites and blacks is important, but it is to be realized that no two people would agree upon the exact way in which these tones are to balance. Turning the prisms, laying one on its side, putting lenses on prisms, eliminating one lens or prism,—all these approaches were tried until the arrangement was satisfactory. There is a definite "clicking" within when this point has been approached. Raising and lowering the spot plays a part in this composition essay, much in the same manner as increasing and decreasing the volume of tones plays a part in symphonic composition. The last technique to be applied here, was the addition of a reflector placed underneath the camera lens, to open up the shadow areas. The full value of such an exercise can't be realized until other types of subjects are tried.

As a little "tour" before lunch I set up the reducing glass and made a study with three spots. Simplicity of effect was the entire motive. Two of the spots were focused on the background (employing the "barn doors" to get the straight lines), and another

FIRST PICTURE OF THE DAY





SELF PORTRAIT

spot was used behind and above the subject. To get just the right amount of refraction within the lens, it was necessary to turn it till the most interesting gradation of tones appeared.

From a purely commercial point of view, it is conceivable that an optical company could use either of these studies in an advertisement. These lenses and optical objects can be purchased from the companies, or in discarded lots due to imperfections. Try looking around for these sets in second-hand stores.

During the lunch hour I wandered into the shoe shop for a shine. The hats and shoes seemed to provide a rather interesting setting for my image reflected in the mirror, so I decided to do a self-portrait. Without these framing objects, the pic-

EFFECT—Division of Interest.



REDUCING LENS



EFFECT—Slow Shutter Speed.



ture is just another vague snap-shot. My Rolleiflex is visible, but I don't think that there is any distraction on this account. The light source was daylight plus the fluorescent light of the shop. The exposure was one second at F3.5 on Super XX film. It is a little difficult to figure out the category of a photograph like this: I find it difficult to call it "documentary,"—perhaps it is just a glorified snap-shot.

On going out of the shop, I was impressed by the neon sign over the shoeman's head and decided to take another shot. Certainly there was divided interest between the man and the lights above him. Trying to have these elements tie-up or balance, was solved by shooting from a slightly lowered point of view.

To try to explain the mental approach



TO BURN UP, OR DOWN—OR BOTH

to these photographs would be rather simple; I was attracted by effects. In the first case it was the hats and shoes surrounding the subjects, and in the second, by unusual lighting. I think that if you begin in this manner, pictures will "occur" to you almost automatically. By being observant and spotting unusual visual and psychological experiences, you will frequently "see" a picture.

In the afternoon the mood had changed, and the rarified atmosphere of the studio led to the study of the glamorous young lady with the cigarette. In a photograph of this type it is necessary to create a mood for the model that will bring out an expression of quiet, calm contemplation. Direction has to be subtle, and the photographer has to be ready to shoot quickly, if he is to capture the expression. Music playing in the background is a great help in this type of work. Actually,

there was someone in the studio at the time humming a piece by Debussy.

The technical aspects of this study had to be handled very carefully; there is a tendency to allow backgrounds to overshadow the subject. I used a fine, stiff net, placed slightly out of focus, and folded a bit to take away from the monotony. A pin-spot placed behind the model and to one side, provided illumination on the smoke from the cigarette. Glamour these days is based partially on the high cheek-boned anatomy of certain faces; thus,—a front spot placed at about sixty degrees will bring out this feature to best advantage.

Finishing up the afternoon, I decided to do a picture of some flames. A newspaper was lit in a large receptacle, and the camera brought to within three feet of the flames. I exposed for about a second and wasn't concerned with stopping the movement. In this case movement added to the effect. Two negatives were selected from a series of about a dozen, then one of them was turned upside down and placed over the other inside the carrier of the enlarger. This is a montage, in which the "sandwiching" technique is employed. In attempting this type of work I certainly recommend that you have a fire bucket nearby!

Going home that evening I was attracted by the eerie aspect of the figures standing in front of the sandwich shop. An exposure of one second at F:3.5 was made on Super-XX film. The fact that the figures moved a bit gives the shot a ghostlike quality that still subjects wouldn't possess.

You may say that I have concocted these shots for the purpose of writing an article; actually I am trying to broaden my scope both as a person and as a photographer. There is a wonderful interaction of influences when you work in this manner; and I am convinced of the activation of sources of inspiration, which spring from within a person, when this approach is given a chance to come to the surface. Diversification of interest is a clue to infinite worlds.



ALAN FONTAINE warms against a background that is too aggressive in glamour portraiture. One spotlight was used to pick out the wavy cigarette smoke, a front spot was carefully placed to bring out the best in the model's face.



LELAND SHEDS

JOE MUNROE

Recognized as a basic step to better pictures is mastery of

EXPOSURE-DEVELOPMENT RELATIONSHIP

by Joe Munroe

WE'RE IT POSSIBLE to stand on an imaginary mountain and scan below, the whole vast field of photo technique, the giant of its phases would be easily seen as the Exposure—Development Relationship. More than anything else, mastery of this step is the most important factor in a photographer's ability to convey his sensitivities to a photographic print.

A masterful print is fundamentally impossible without a masterful negative even though the photographer may be an "aesthetic genius." On the other hand, the very finest print means nothing without sensitive personal content. Actually this business of "technique" and "aesthetics" should be separated only for discussion and instruction purposes. It is too seldom pointed out that in the working practice of top-notch camera workers, it's all wrapped up in one package—photography.

Now what's all the fuss and confusion about? There are seemingly infinite numbers of data tables, gamma charts, and the like which direct us to dunk each certain type of film for so many minutes in a certain type developer at a certain temperature, and, providing we have given a certain exposure, we will get a certain result. The mischievous hidden joker in this proposition is: What results?

True, we have a negative with tonal gradations and with a densitometer we can determine the relationship of highlights to shadows and find that it is a certain figure. So far, so good. By measuring our subject's light intensities we find that we have squeezed a normal range of tones into the negative and can print it

on a piece of photographic paper. Now we have a *normal result*.

Let me make it clear that I have no quarrel with tables, curves, and data books—I'd be lost without them. When you use roll film exclusively and shoot a variety of subjects on each roll, the normal time and temperature method of development with exposures held within close tolerances, is the best method possible. But have we given any thought as to whether all this will give us the emotional response we seek in the print?

Assuming we have a given subject with fixed lighting, and are working within the printable latitude of our emulsions; there is only one way for a photographer to control *contrast* in a given film. That is by development (either by the type of developer, or duration). The way to control *density* in a given film is by exposure. It is a delicate balance of contrast and density in each negative that determines its tonal brilliance and tonal content; in short, the emotional effect you will be able to get into your print. Obviously there can be no *one* exposure—development relationship that will give optimum results under all conditions, unless we make the same type of photograph telling the same story over and over again.

Let's say we are on a summer vacation and ramble into a quiet fishing village on a bright, sunny day. We come upon a couple of old sheds, and looking between them we see in the distance some fishnets drying and a pair of sleepy gulls perched on a rooftop. The composition intrigues us and while setting up the camera and taking various readings with our exposure meter, we should try to

visualize the finished print that will result — its tonal keys and emotional content, even its size and mounting. In what tonal key, for instance, will the textured wood surface on the left appear? How dark do we want to render the sky? How dark the cavernous space between the sheds?

Exposure meters are so calculated that a direct reading taken from a single tone surface of the subject, and translated off the normal arrow into stop openings and shutter speeds, will, with normal development and normal printing, produce a *middle grey* tone in the print. Middle grey, that is, as compared with the higher and lower tones around it. This occurs *regardless* of whether or not the single tone surface was a highlight, shadow, or middle tone in the original light of the subject matter. If we take our reading off a highlight and set it to the normal arrow on our meter we are, in effect, darkening our entire tonal scale—tending to make a highlight into a middle tone or a low tone out of what would ordinarily be a middle tone.

It should always be kept in mind that the dials on an exposure meter should be used like an H. & D. curve. The H. & D. curve is a plotted graph which represents the entire measurable range of tone values possible to obtain on a negative. Most film manufacturers can supply H. & D. curves for their films. For all practical purposes the space between the U and O letters on a Weston meter, for instance, represents the straight line portion of the curve, plus a small chunk on each end. (If you use a G. E. meter, the U and O marks can be applied with white ink to the dial. This must be done to all three light value arrows, and for the sake of accuracy you'll need to borrow a friend's Weston for a few minutes. The added convenience in exposure calculation is well worth the effort.)

Getting back to our sheds at the fishing village, we discover that if a reading is taken on the white sand and set on the shoulder of the curve (the O on a Weston meter), a reading taken between the sheds, in the shadow, falls way below the

toe of the curve (the U on a Weston meter) and simply wouldn't register on the film under normal exposure and development conditions. Most bright sunlight scenes are that way, and as a rule the design of the masses and details are such that we don't object to lopping off large chunks of tones from each end of our scale. But here, no! The detail in the shadows of the sheds must be in the print to preserve the depth and textural feeling and the large highlight areas must not become chalky or washed-out.

If we decide on the wooden shingle and board surfaces at the left of the picture as our middle tone, expose accordingly and develop normally, we know we'll lose the shadow detail between the sheds and probably block up the highlights of the nets, sand, and gulls to boot.

If, on the other hand, we cut down our exposure to make sure of proper highlight gradations, we will surely lose our deep shadow detail and possibly some medium shadow gradations as well. So what will we do? Why, we'll plan on overexposure and under-development.

OVER EXPOSURE—UNDER DEVELOPMENT When to Use?

Whenever it is desirable to compress the tonal scale, thus rendering relatively *more* printable tones in the negative, with softer differences, than would be possible under normal conditions, use this method.

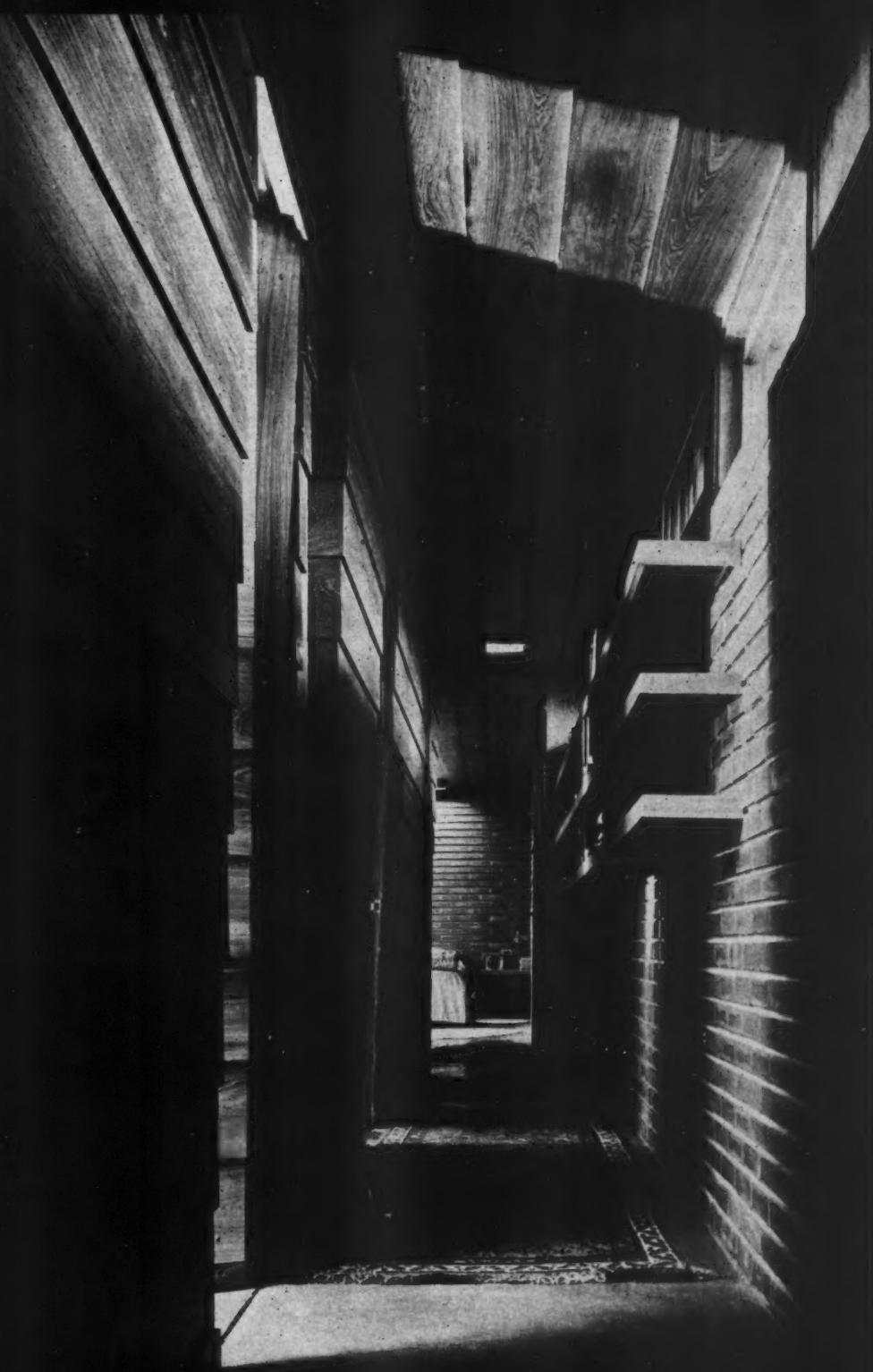
Under What Light Conditions?

This, of course, is quite variable, but I find that I generally apply this technique under backlit, or bright sunlight conditions (unless the sun is at my back), large interior views crosslighted by photoflood, and for multiple flash shots.

How Does It Work?

If one area of emulsion has been struck by a relatively large quantity of light, it will continue to build density while developing until that area is theoretically

GREAT RANGE in light intensities in the picture opposite called for a degree of over-exposure and modified development plus the Water Bath technique described on the next page.



opaque. Another area of emulsion struck by a relatively small quantity of light has a lesser developing potential and will theoretically reach a certain density fairly quickly—level off, and stop. Practically speaking, if we happen to be using a ten-minute developer, the shadows will have developed to 90% of their greatest possible density in about seven minutes. Thus, if we have light readings that put the shadows *outside* the range of the films, we can lengthen our exposure to a point where the shadow comes *within* the foot of the curve, thereby getting the shadow

detail we want. Then, by cutting our development time, we prevent our overexposed highlight portions from blocking up. This procedure does not materially affect the low key gradation and will improve your final picture.

To What Extent Can This Be Done?

I develop by inspection (but not by desensitizing), which means I set the timer at about two minutes less than the minimum time I've calculated for any of the films in the particular batch. When the bell goes off, I start looking at the



ones I have segregated for short development under a Wratten No. 3 green safelight with a 10 watt bulb at 3 feet for about 5 seconds, and put them in the short stop as they appear to be ready.

While I can't very well give exact times for developing, I generally give an increase of $\frac{1}{2}$ to $1\frac{1}{2}$ stops (or the equivalent in shutter speed) and cut the development time from a normal of, say, 18 minutes for D-76, to 12 minutes, when I want to increase shadow detail and lower contrast. Beyond that I go to the Water Bath method.



Is the Water Bath for Pictures That Smell?

No, the Water Bath development procedure is the furthest extention, or thereabouts, of the Overexpose—Underdevelop method. It works the same way, only more so, and on a somewhat different principle. But first—

What Is the Mechanical Procedure?

Before the exposure is made, I make a normal calculation and then open up three additional F stops or equivalent in shutter speed. The film is placed for 20 seconds in any average working developer such as D-76—DK-50 or ABC Pyro. Then the film is gently placed in a tray of *still* water for 3 minutes with *no agitation*. Then back to the developer for 20 secs.—then to the water for 3 minutes and keep repeating for $1\frac{1}{2}$ to twice normal total development time. Trays should be used, not tanks, and films laid flat in the water to prevent running streaks.

Why No Agitation?

Because this developing method works on the principle of developer exhaustion (i. e. the 20 seconds in the developer saturates the film with developer). When placed in the water, the residual developer in the emulsion and in the film base continues to act in the following manner: The developer saturating a highlight area is quickly exhausted by its high rate of reduction activity. The same proportionate quantity of residual developer is also acting in the shadow areas, but due to the much slower rate of reduction, this particular bit of developer continues to act for some time after the highlights have stopped developing. Someone once took the trouble to find out that it takes approximately three minutes for the residual action of the normal working developer to exhaust itself in the shadow areas if not replaced by fresh developer; the highlight exhaustion time is roughly figured at about one minute.

BACKLIGHTED SHOTS should contain a maximum of printable tones in the negative, often-times obtained in greater degree by using the short-exposure increased-development technique.

This same process is repeated when the film is removed from the water and put back in the developer for 20 seconds (or enough time for the film to soak up a good load) and then back into the water, etc. In effect, then, we are getting about two or three times more development in the shadows than in the highlights.

It can easily be seen that if the film were agitated in the water, the residual developer would quickly be washed out with little beneficial effect.

That takes care of the over exposure—under development side of the story.

NORMAL EXPOSURE— NORMAL DEVELOPMENT

Back once again to our little fishing village, let's see what else we can find. The photograph "Fishing Village," was taken on the same day at the same place as the "Leland Sheds." Lighting was the same—as was camera, film, and lens. Exposure readings with the meter revealed the same long scale of light values.

Nevertheless, our technical approach here is definitely of the *normal Exposure—Development Relationship* type.

There is no need of going into detail on normal exposure, because it is the procedure followed when one exposes and develops according to the rules and formulas presented by the manufacturers. The important thing is: Why should we expose and develop *this* particular scene in a normal way, when the range of lighting values is the same as a previous scene in which we gave a greater than normal exposure with a modified development?

The answer lies again in the emotional response we hope to evoke from our finished print. In looking over this scene with the barrels in the foreground and the galaxy of sheds, houses, wood textures, and the people wandering around, we see that there are no large masses of tones and textures predominant in our composition—as there were in the broad, boldly massed layout of the "Leland Sheds" shot. The entire picture area, relatively speaking, is a closely knit mass of highlights, shadows, and middle tones, and to deviate from a normal exposure development pro-

cess would tend to strongly emphasize either the highlights or the shadows. This is exactly what we do not want. Here, our story will be told with an exciting array of middle tones. While the deepest shadow and the whitest highlights will be sacrificed, they are of little importance in this particular shot. Striving to hold them all within our paper's printing scale would needlessly soften and muddy-up our overall effect.

Our technique with the meter, then, will be to pick out a highlight and a shadow, and make our exposure from their average reading. Another method might be to select an area which we know we shall want rendered as a middle tone, take our reading from that, set our normal arrow to the light value—and read direct. Development will be time and temperature according to manufacturer's specifications.

As mentioned before, the normal exposure used with the normal development is the most practical working method for photographers who use roll film exclusively and shoot a variety of subjects under a number of different light conditions. Also, regardless of the kind of equipment used, when a large number of different types of photographs are to be made in a short period of time, the normal procedure is probably the safest.

Now let's consider the third and final general phase of the *Exposure—Development* problem.

Supposing we happen upon a subject that is simply begging to be photographed, but when we look at it in the ground glass, the impression we receive is what we might expect if someone had tossed a gob of cooked oatmeal on our lens. The light which illuminates the subject has no direction whatsoever. It may be a very overcast day or we may be working on the shady side of our subject—in addition to which the subject itself might be practically all one tone with scarcely any variations that we could call highlights or shadows. The photograph "Gargoyle" was just such an example. Regardless of where the meter was pointed in the picture area, the needle had nary a waver.



FISHING VILLAGE

JOE MUNROE



DULL DAYS, flat interior scenes or any subject matter containing little contrast, may be peped up considerably by slight under-exposure developed to Gamma Infinity.

GARGOYLE
JOE MUNROE

Right here it should be remembered that an exposure meter takes in all the light from the area it covers and ends up giving an average. No matter what a meter says, if there is an illumination whatsoever on a surface to be photographed, there will be highlights and shadows even though the range between them is visually indiscernible. If we are seeking a brilliant, rich photographic print, it is up to us to exaggerate that slight difference with whatever means are at our disposal.

We have seen that if we give a full exposure with a short development, we shall tend to make smaller the intensity range between the highlights and the shadows. Obviously, that is exactly the opposite of our needs here.

If we read our meter with the setting on the normal arrow, we will end up with a print carrying approximately the same contrast as our subject. This, too, is undesirable.

Therefore, our only alternative is:

UNDER EXPOSURE—OVER DEVELOPMENT
When to Use?

Whenever it is desired to expand the tonal scale, i. e., given only a few tones to begin with, we use this method to exaggerate the differences between them.

Under What Light Conditions?

I usually apply this method in varying degrees when working: On an overcast day, on the shady side of a sunlit set-up, or indirectly or flatly lighted interiors or

(Continued on page 134)



From a Kodak Dye Transfer Print

Excitement Ahead! Make your own Color Prints ...with the NEW Kodak Dye Transfer Process

THREE'S a really big moment ahead . . . when you finish your first color print by the new Kodak Dye Transfer method. And, with practice, your pleasure will grow. For Kodak Dye Transfer responds to skill; it's flexible, controllable, fast. Once you've made your matrices from the three separation negatives, you can produce a print every ten or fifteen minutes.

Your original transparency may be on Ektachrome or Kodachrome. Print size—up to 11 x 14—is yours to decide.

Usual darkroom equipment and a few special materials do the trick. It's pure fun to watch the color print build up, as the dye transfers from the three matrices to the mordanted paper. A white-light job, too, so the whole family can watch.

Kodak Dye Transfer resembles the previous Wash-Off Relief Process, but it's less difficult, less time-consuming . . . and the prints themselves are even lovelier. Ask your Kodak dealer for a full-color descriptive folder.

IT'S KODAK FOR COLOR

Kodak

BULLETINS

NEWS OF KODAK PLANS AND PRODUCTS

Fine Printer—A really good contact printer is the basis of a good darkroom. Even if most of your prints are 11 x 14 or 16 x 20 exhibition enlargements, contact printing equipment is needed for record and file prints, for preliminary "proofs" to aid in selecting and cropping pictures for enlargement, and for projects such as greeting cards, photographic bookplates, making lantern slides or miniature film positives, preparing same-size negatives from Kodachrome or Ektachrome transparencies, and the like.

Therefore, you'll be glad to know the Kodak All-Metal Printer, Model 2, is back in production, and supplies are moving out regularly to Kodak dealers.

This printer (pictured below) has so many good points, so many features which enhance its capacity and utility, that it's difficult to decide which to list first. Its name, of course, is derived from the body construction—strong, light-weight, one-piece aluminum die-cast shell, handsomely finished, precise in dimensions, completely free from the risk of warping or loose joints. And its

compactness is surprising; although it will accept negatives up to 4 x 5 $\frac{1}{2}$ inches, and will accommodate paper as large as 5 x 7, the over-all dimensions of the printer are only 10 $\frac{1}{2}$ x 8 $\frac{1}{2}$ x 6 $\frac{1}{2}$ inches. This is a considerable virtue in small darkrooms where every inch of working space is at a premium.

Illumination is remarkably even. There's a safelight which assists in placement of negative and paper—and a safelight window in the right-hand side of the printer sheds helpful light on the bench alongside. The printing light is controlled by an automatic lock, which switches the light on *after* the platen has been fully pressed down, and switches it off *before* the platen is lifted. For convenience in placing the paper, the platen is divided by a strong, full-width center hinge. The printing glass is selected plate, with all edges bevelled.

The platen pad is a unique combination of rubber faced with felt—a design which retains the uniform pressure of rubber, but eliminates the sticking to which

ordinary rubber platen pads are often subject in hot or humid weather.

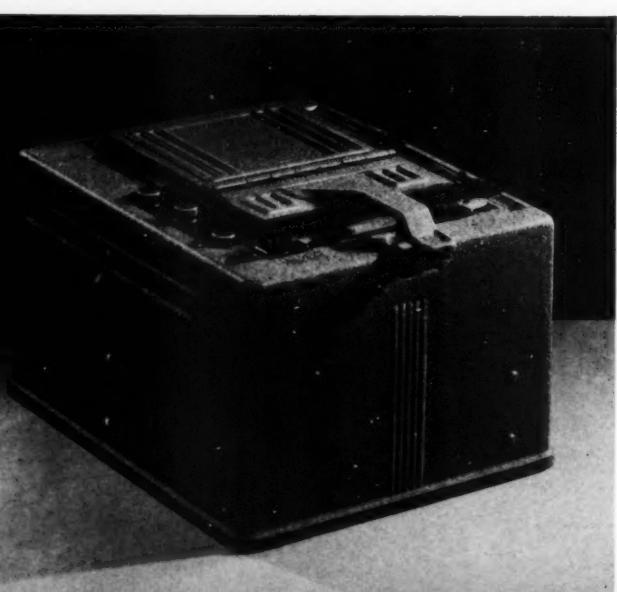
There's a negative-locking device which is extremely handy, and which is independent of the margin masks. All four margin masks can be adjusted independently, and accurate trans-illuminated margin guide scales are provided for both vertical and horizontal framing. A paper-positioning guide expedites placement and insures exact print margins.

Miniature camera owners particularly appreciate the 35mm. strip printing guides which are standard equipment, and very handy for rapid production of record prints from the small negatives. For special dodging of larger negatives, there's a side slot for a diffusing glass to support cepta paper friskets, or for ground glass on which areas have been darkened by pencilling. The extension cord of the printer is 94 inches long—ample for almost all darkrooms.

This is truly an amateur printer of professional quality—and it deserves a thorough inspection at your Kodak dealer's.

Paper Negatives—A new 12-page Kodak pamphlet, *The Paper Negative Process for Pictorial Printing*, is now available. Terse, pointed, and filled with specific practical data, it rounds up all the workable techniques in this field; amply covers control methods, addition and suppression of detail, minimizing and emphasizing paper grain, judging paper negatives, adding special textures, and so forth; lists the most desirable materials for each technique; and contains a convenient bibliography for those who wish to explore this field in more detail. It's free of charge; write to Kodak's Sales Service Division, Rochester 4, N. Y.

Incidentally, a new printing of that classic and inexpensive guide to photography, *How to Make Good Pictures*, recently reached Kodak dealers. It's substantially identical with the last prewar edition; and, with demand what it is, the supply probably won't last long.



THE STORY IS IN THE CURVES



KODABROMIDE

is the most popular of all enlarging papers. The two characteristic curves plotted above help explain why.

Each curve charts the tone range of a print on Kodabromide F. The curve at right shows tone reproduction for a fully exposed print developed somewhat less than the *minimum* recommended time. At left, the curve for a print given minimum exposure and developed for the *maximum* recommended time.

The peak of each curve represents rich black tones; the toe, clean highlights. In between, a long, well-spaced range of middle values.

Note that these curves, though wide apart, are very similar in slope and height. In the briefly developed print, good blacks are already formed; in the fully developed print, the highlights are still free of fog.

That wide spacing between the curves represents Kodabromide's unusual tolerance in exposure and development. In practice, any exposure in the zone between these curves would yield a superb print—simply through adjustment of the developing time.

Regular users of Kodabromide are well aware of this tolerance; it has saved them many a print. They know that Kodabromide is the paper on which great prints are consistently realized.

See your Kodak dealer

KODAK products are sold through Kodak dealers, any of whom will be glad to complete descriptions of Kodak products which are mentioned in these pages. Usually, too, they will give you opportunity for firsthand inspection of the advertised items.

In matters of general photographic information your Kodak dealer will be found to be well and soundly informed.

Kodak



Contact print from a 35mm, Kodak Plus-X negative developed in Kodak Microdol Developer . . . and a 10-diameter enlargement from part of negative.

Kodak Microdol

... the practical way to true fine-grain development

SATINY skin texture . . . soft skies . . . smooth fields of snow . . . that's what you want in your enlargements. That's what you get by use of Kodak Microdol plus proper care in exposing and processing your negatives.

You can give normal exposure now. With Microdol there is no appreciable loss of film speed in the developing tank. And Microdol works quite fast . . . forms no scum . . . holds sludge to a minimum . . . gives uniform performance with proper use of the replenisher . . . costs little.

Try Microdol . . . and get an important free booklet on fine-grain development at your dealer's, or write Eastman Kodak Company, Rochester 4, N. Y.



Kodak

GENESIS OF A SALON PRINT

PICTURES AND TEXT BY CLARENCE PONTING

THE FIRST TIME the average amateur visits a photographic salon, he is apt to leave the exhibit feeling slightly frustrated. Here he has seen commonplace subjects photographed with equipment no better than his own—but with results so superior to the shots he has made that he begins to suspect salonists of practicing picture-making wizardry known only to themselves.

Actually a salon exhibitor rarely makes a negative which, without some manipula-

tion of both it and/or the print, can produce a successful salon picture. Ninety-nine times out of a hundred, the "something" that lifts a picture out of the snapshot class into the salon category is the individuality bestowed upon it by means of manipulation.

To illustrate this point I have selected a picture which, if printed "straight" from the original negative, would definitely fall within the snapshot class. With perhaps more reworking than is usually

FIGURE 1. A straight print from the original negative. Notice the blank sky, uninteresting expanse of road, the white cottage gable, and the figure of the girl. Then compare this print with the final salon print on the second page following.



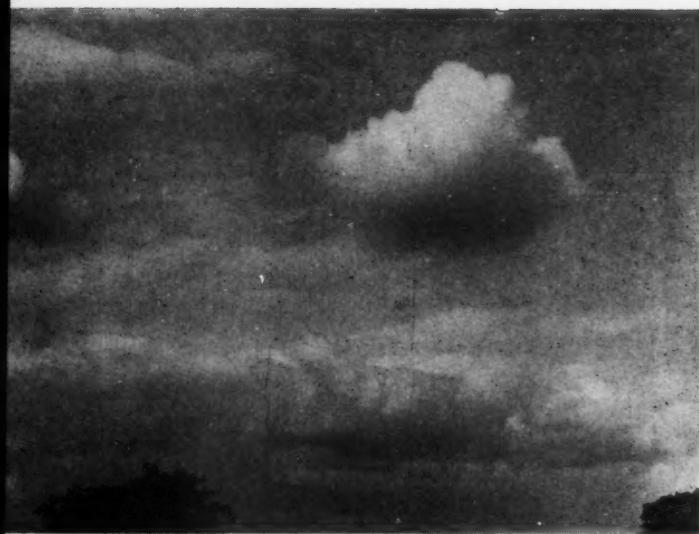


FIGURE 2. A print from a cloud negative which was used to fill in the blank sky. The top of the tree at the bottom left was used to introduce a shadow on the road in the final salon print.

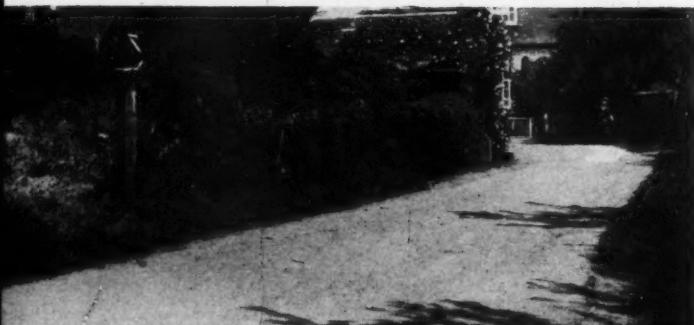


FIGURE 3. A portion of the road showing the uninteresting foreground expanse before shadows were introduced. Notice how the legs of the girl have already been painted out with dye opaque.



FIGURE 4. Now the rest of the girl's figure has vanished, foreground shadows have been introduced, a suggestion of cart tracks have been worked into the road, and the white gable has been toned down.

required, the same picture has been highly successful as a salon print.

Figure 1 is a straight print from the unworked negative. This is what might be termed a typical "hunch" picture—a scene that was snapped not because I was satisfied with it in its natural state, but because I had a hunch that manipulation of the negative and print could vastly improve it. The composition in the original print was overpowered by the expanse of blank sky and road. The shrubbery was listless, there were disturbing telephone wires, the girl added nothing to the picture, and there was no center of focal interest. These were the major faults I set out to correct.

First, a light application of concentrater Kodak photo-dye (an opaque) was painted over the sky portion of the negative. This rendered the telephone wires

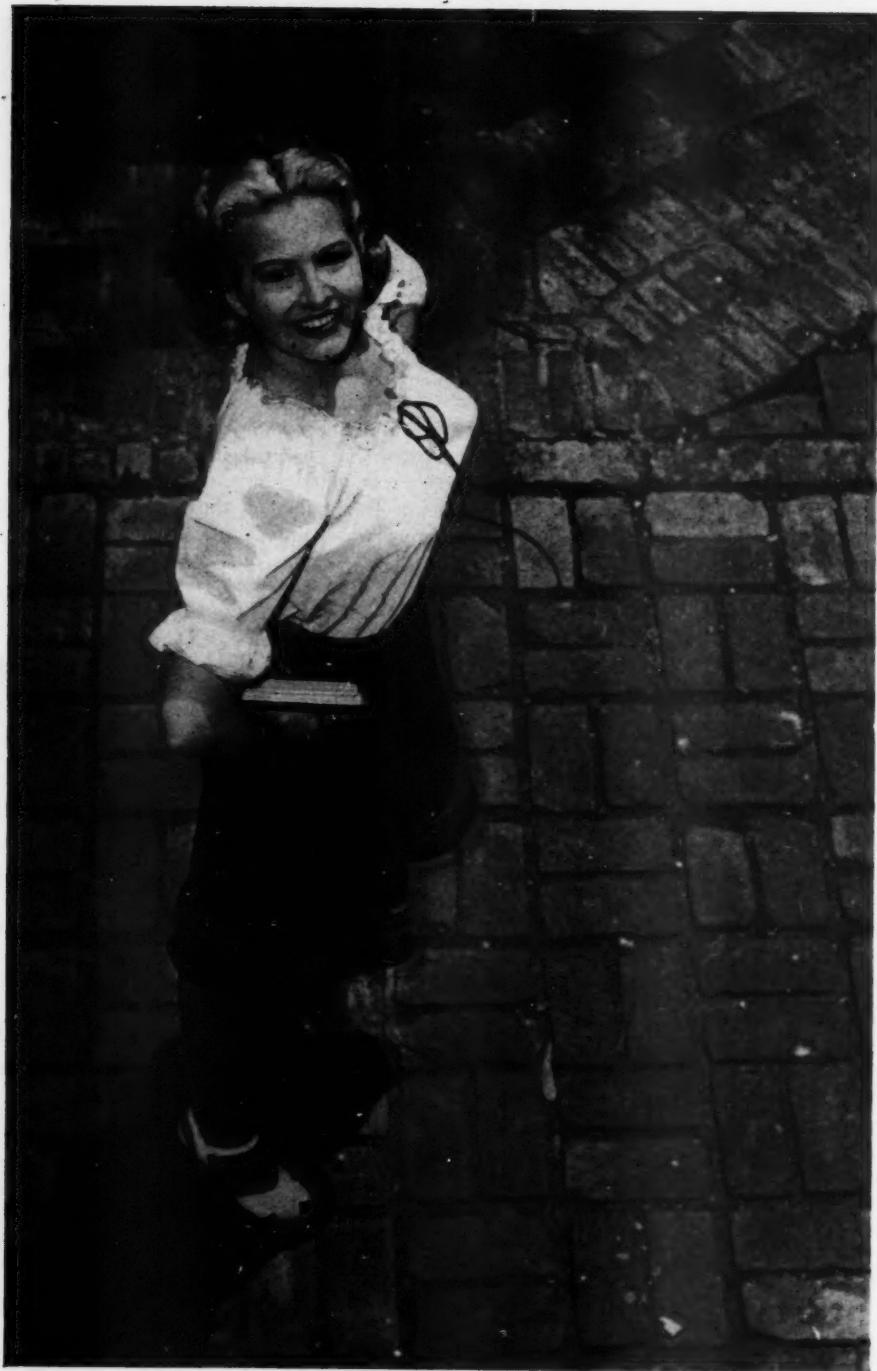
and existing sky unprintable, leaving a pure white expanse on which the cloud shown in Figure 2 could be printed. A light application of dye material was also applied to the hedge at the side of the road, for although bathed in sunlight the hedge was too dark in the negative. Since the girl's legs appeared against the white background of the road, it was a simple matter to opaque them out with the same photo-dye.

All other alterations were made on the final print with oil paint (ordinary pigments which are available in small tubes of black, white, burnt umber, etc., at any art supply store), and with soft lead pencil. A white gable which unduly attracted the eye was toned down, all irritating white spots were subdued, the rest of the girl's figure was painted out, and a few brush

(Continued on page 132)

FIGURE 5. The final salon print.





THE LONG AND SHORT OF LENSES

By MAURICE TERRELL

Photo-Reporter for *Look Magazine*

THIS may come as something of a shock to you who have believed everything you have read in photographic text-books, but the fact of the matter is that I *like* distortion in pictures, and go out of my way to get it!

There, it's said. I quite realize that this is rank heresy even to think, much less to write for publication in a photographic magazine, but it's true. I rarely shoot a picture with a focal length lens considered "normal" for the film size I use, (despite the platitude of read-a-book and write-a-book authors that the focal length of the lens simply *must* equal the diagonal of the film size, or the perspective in the picture will not approximate that of the human eye) and that is very, very bad because the boogey-man "distortion" raises his ugly head.

But I happen to like this boogey-man. I give him a warm welcome and invite him into my pictures and let him work for me. Very frequently he obliges and by his effort alone lifts what would have been just another ho-hum picture into something in the gee-whiz class. He's a capable assistant if you know how to humor him.

The first requisite of a successful photograph is that it must have enough dramatic impact to stop the onlooker and hold his attention. It must be noticed. Having done that, it has crossed the first hurdle. Failing, it can never be successful no matter what its other attributes because it won't even be seen.

I consider legitimate any photographic device you can employ to insure generous quantities of this elusive impact. Composition, lighting, action, color—they all

MARILYN MAXWELL, blonde MGM actress photographed with a short focal-length lens from a low view-point, is given added height and more slimness. On the opposite page, same girl, same camera, same lens; only the viewpoint is changed. Some difference, huh?



help. And so does distortion, because the moment you present a subject with a different perspective than one the onlooker is accustomed to, it jars him out of his complacency and commands his attention.

Distortion can best be described, according to the text-book purists, as any perspective which differs from that of the human eye. They believe that just because it's different, it is not only inferior, but practically a form of evil. They learned long ago that to achieve this so-called normal perspective the focal-length of the lens should equal or be slightly longer than the diagonal of the film size to be covered. This became their criterion for what they called the normal lens. This determined the length usually fitted by the manufacturer. This became the average lens, ideally suited for average results. True. But why confine your work to average results? Instead, take advantage of every facility photography offers you to give your work a lift. Enhance the effect for which you strive even by the deliberate breaking of a rule, if that's what it takes to do it, with a conscious knowledge of what you are doing and why you are doing it that way.

If your camera outfit is one that accommodates interchangeable lenses and you are not taking advantage of the versatility this feature offers, you are actually ham-stringing your own work. It amounts to about the same thing as never shifting gears in your car. On my equipment I employ four different focal-length lenses on one standard film size, yet I would say that the normal length lens produces less than one quarter of my pictures; for the other three-quarter I have purposefully used a lens longer or shorter in an attempt to present with more punch the idea behind the picture, just as a painter alters his perspective if it suits the feeling he is trying to convey. Here is an opportunity for the photographer, as an intelligent individual, to exercise a choice in one of the tools of his trade, thereby influencing to a great extent his final results.

As a matter of fact, if I could have but

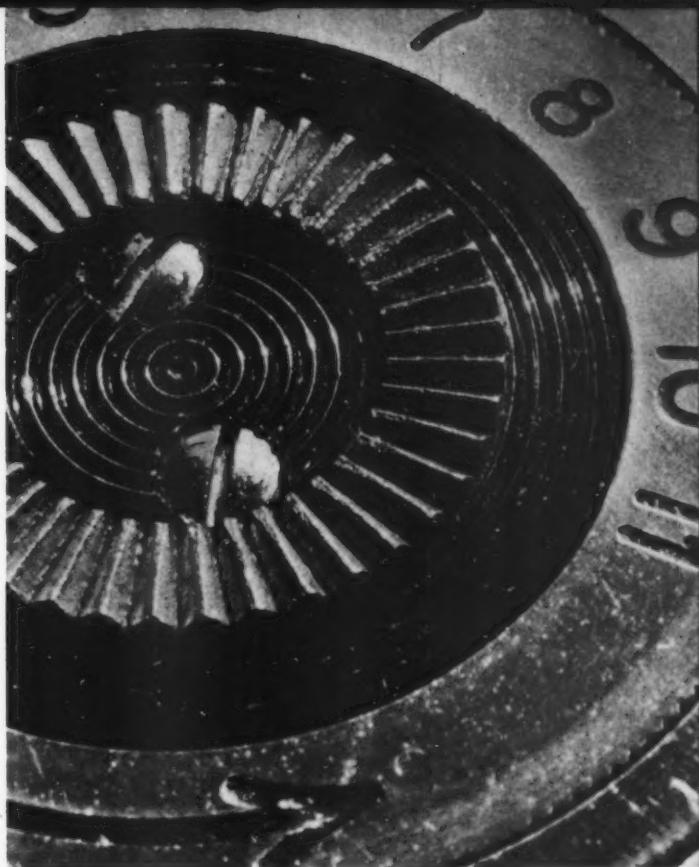
one lens it would not be of the normal focal length at all, but rather one much shorter, because I've found from long experience it would be more useful. I'm not alone in this choice. The American news-photographer arrived at this same conclusion long ago, and his usual lens measured considerably shorter than the diagonal of his 4x5 film, with today's trend toward an even shorter one. In the magazine field there are also examples. Earl Theisen, *Look's* ace photog, has many cameras with a variety of lenses at his disposal, yet his favorite outfit is a $3\frac{1}{4} \times 4\frac{1}{4}$ equipped with a $4\frac{1}{8}$ inch lens, one which is medium wide-angle by popular conception, being about three-quarters of an inch shorter than would be considered ideal by one who goes by the book. The Rolleiflex camera has had quite a vogue with many other magazine photographers for lots of good reasons, not the least of which is that its lens although not interchangeable is relatively shorter than would be considered normal.

For my own work I happen to favor $2\frac{1}{4} \times 3\frac{1}{4}$ film, and I shoot on film-pack which gives me a slightly larger negative than does cut film. The diagonal of the working surface measures about $3\frac{7}{8}$ inches, but my favorite lens is an 8.3 cm., almost a half an inch shorter. To make use of this lens at all I had to rebuild a press-type camera at considerable expense, because the regular outfit would not accommodate it.

The advantages of a shorter lens are almost too numerous to mention. Most of them you have heard before. First and most obvious, of course, is the wider angle of view. It is this, coupled with the greater depth of focus of the shorter lens, which is largely responsible for many of the dramatic shots you have seen in picture magazines. You may have wished that you could emulate them without quite knowing how to begin. True, this wider angle does produce that distortion we talked about, but the thinking photographer turns that to his own advantage. By a conscious use of this same distortion as a photographic tool, he heightens the

LIKE CLOSE-UPS?
Here's one below made on a view-camera with the bellows fully extended, getting the largest image possible with a normal lens.

At the right; same subject, same camera, same bellows extension. Only difference is that a shorter lens was used, enabling the camera to move closer to the subject and get a magnified image. In such close-up work it's interesting to note that a lens which may be too short to cover a negative size when focussed at infinity will cover perfectly when bellows are extended.



dramatic impact of his picture by producing one that is eye compelling because it does *not* agree with the subject as your eye would see it. This is truly a head-start on the road to successful photography, because it helps to insure that your picture will at least stop the onlooker.

With the short lens' ability to change normal perspective you have in your own hands the control to emphasize any given element in your composition, simply by placing it nearer the camera. For example, if you are photographing a full-figure of a girl in a bathing suit and you want her head to dominate the picture, you would hold the camera high, at eye level. But if instead you wished to emphasize the legs you would choose a lower viewpoint. Similarly, if you are shooting a



WIDE ANGLE lenses are particularly valuable in the limited spaces of your own home. This lens used at a low angle serves to accentuate the difference in the heights of mother and child, and in the angular down-shot, the little fellow looks even smaller.

portrait of a subject with a massive forehead but a weak chin, and you wished to correct for these features, you have but to lower your camera to chin level. This would tend to subordinate the forehead and strengthen the chin.

Another interesting characteristic of a shorter than normal lens is its apparent ability to take weight off the subject, to make the subject appear thinner, which certainly will not hurt your popularity as a photographer. The explanation for this is simple; when using a short lens, you naturally move your camera in closer to the subject in order to get a fair sized image on the negative, consequently you tend to see less "around" the sides of the subject,—hence the illusion of less weight. Photographing the same girl on the same camera and getting the same

sized image with both a short and a long lens, the picture made with the short one would appear to take pounds off the girl's weight as compared to the other, for which she would probably think you a wonderful photographer.

Likewise, with the use of a short lens, you can make a subject appear taller by using a low camera angle and shooting up at them, or you can make them shorter by aiming down. With the normal or long lens you do not have nearly so much control.

In addition, there is an added depth of focus (which at certain times you never seem to have enough of) that is of greatest benefit when you are working under pressure and have to guess at the focus without recourse to range-finder or ground-glass. This greater depth is desir-

FOCAL LENGTHS

FILM SIZE	SUGGESTED SHORT	NORMAL	SUGGESTED LONG	TELEPHOTO
2 $\frac{1}{4}$ x 3 $\frac{1}{4}$	3 - 3 $\frac{1}{4}$	4	7 $\frac{1}{2}$ - 8	11 - 14
3 $\frac{1}{4}$ x 4 $\frac{1}{4}$	4 - 4 $\frac{1}{4}$	5	8 $\frac{1}{4}$ - 9	14 - 17
4 x 5	5 - 5 $\frac{1}{4}$	6	9 - 12	17 - 21



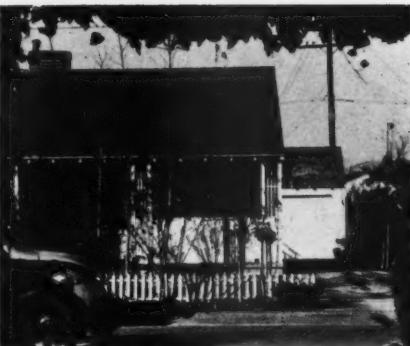
A LONG-LENS shot of actor Gregory Peck adds apparent weight and the very shallow depth of focus almost eliminates the background.

In a shot where texture and depth of focus is desired, a shorter focal length is indicated. The same film size here as in the Peck shot, and both are about the same size, but compare the depth and texture in the pictures.

able for many reasons. It means that you can shoot a given picture requiring a certain depth of field at a wider aperture, which in turn permits you to use a faster shutter speed than would otherwise have been possible, a safeguard against movement in camera or subject. We have all sacrificed pictures because we could not quite manage the compromise we needed between depth of field and adequate shutter speed.

And yet again, on a double extension bellows camera the short lens still further comes into its own, enabling you to shoot really closeup, intimate pictures beyond the capabilities of regular lens equipment. Here, the shorter the lens the more its power of magnification with a given bellows extension. It means that when you





COMPARISON SHOTS. The one on the left looking across the street from underneath an ivy covered porch was made with a three-inch lens. The other one was made with the same camera of the same subject retaining the same size leaves in the foreground. An 11-inch lens was used and the viewpoint moved back to get the same size leaves on the ivy. Notice how the house across the street appears to have moved closer—the street has narrowed down to a sidewalk.

go after those really close-up, gnat's-hair pictures you can accomplish that much more with a short lens.

All this foregoing might lead you to be-

lieve that there's no place for the longer than normal lens, but such is not the case. Next to the short baby my favorite is an 8½ inch, f3.5 beauty, more than twice



HORSE RACING gives you an opportunity to give all your lenses a work-out. At the right is a typical short lens approach. Striving for an intimate shot, the camera is low and close to the subjects. The horses nearest the camera appear to be many times larger than those behind, and the distances between them are exaggerated.

Below is the typical long lens approach, with the camera high and far away from the subjects. There is relatively little difference between the sizes of the horses, and the field appears to be closely bunched, which is not actually the case.



the accepted focal length. Again, it requires special equipment to adapt this one to my needs. Such a long, fast lens demands a reflex camera for greatest utility, so it's mounted on a 4x5 Graflex, but used only with that size film for color. For black-and-white work I had built a special $2\frac{1}{4} \times 3\frac{1}{4}$ reducing back, greatly enhancing the scope of both the camera and myself. Please don't be discouraged about this special equipment; in each case it was necessary because I have not only gone to extremes beyond the capabilities of standard equipment, but in addition I have demanded that it function faultlessly and with less effort than you would ever normally require from your camera work as a hobby. The chances are that your regular outfit, if equipped with interchangeable lens-boards and a double extension bellows, will handle adequately any additional lenses you will care to use.

Long lenses, as well as short, have their special advantages. What they really do is to introduce another form of distortion, as compared to the eye, but which again the intelligent photographer can turn to his own use. Portrait photographers have capitalized on this for years on end, chiefly because it enables them to

(Continued on page 130)

*...a well-known Canadian
writer on the rudiments of:*

PHOTOGRAPHY



A FEW YEARS before the war, while on a ski trip in Europe, I received my first lesson in ski photography by way of a thumping whack on the noggin.

It all began in the shop of a photographer named Tairraz, at Chamonix in the valley of Mont-Blanc. The action shots of skiers made by Tairraz were so sharp, so well composed, so technically perfect that they inspired me to try to duplicate them—if I could.

Since my equipment then consisted of a postcard-size camera with slow shutter speeds, I proceeded—without seeking advice—to order a camera from Paris. Not asking for advice was a mistake. My new camera was a 4x6 English-made reflex, a fine tool in most respects but for making

ski pictures about as handy as a pitchfork potato masher. In spite of its drawbacks, I packed the weighty camera up the slopes several times a week and eventually began to obtain fair results with it. Then one afternoon as I was speeding down the valley to catch the last train going back to Chamonix, I hit soft snow and took a spill. My knapsack flew up over my shoulders and the camera came down on my skull so hard it blacked me out. That was the last ski journey the English camera ever made with me.

Back in Canada the following winter I bought another camera, this one a 4x5 Speed Graphic with a Goerz F:4.5 lens. In my estimation, a Speed Graphic is excellent for ski photography. The only



PORTRAIT OF A SKIER

RENE PAYEN

serious objection that I know of is again a matter of weight. When you carry your outfit on your back and climb high on skis, weight is a primordial factor.

Personally I have no love for an aching back. Thus, after several seasons of using

the Speed Graphic, I bought a Contax. A 35mm camera, whatever the type, is ideal for ski photography provided it is equipped with a good lens and a fast shutter. Being small and comparatively light it takes up very little room in a



TO DRAMATIZE hurtling action, a low camera angle is effective. Flying snow suggests speed. Exposure 1/500 second at F:5.6; no filter.

knapsack. Two cartridges of fine grain panchromatic film will supply enough negative material for a full day. For close-ups I use an 85mm telephoto lens which is worth its weight in gold for the results it gives. Except for the ever-present sunshade and a good exposure meter, any other gadgets are generally superfluous.

For action shots, ski-jumps, turns, and races, I use shutter speeds of 1/500 second and up. It should be remembered that particles of snow should as a rule be "frozen" in midair to emphasize speed.

A fast shutter speed plus a low camera angle is one of the best ways I know of to accomplish this. Against the light pictures are especially effective when they show flying snow beneath the skis and at the same time reveal all the details of the snow pattern. I use only one filter, a K-2.

The choice of backgrounds is so restricted for ski pictures that your safest bet is either the snow itself or the sky. Trees, rocks, or other foreign objects do not permit the subject to stand out well and should be eliminated from the central

area of the picture, or from any other area occupied by subject material. When it is extremely cold you may have to warm your camera occasionally to keep it operating efficiently. If there is a shelter house nearby, you are in luck. Otherwise, you may have to slip the camera under your shirt from time to time. This will be a very interesting experience when the cold is already nipping through your ski garments and your fingers and toes are half numb. After warming a camera, check to make certain the lens is dry before you resume shooting. A lens does not fog over when taken from warm air into cold air—but it may fog when brought from cold air into warm air.

The kind of developer you use for your negatives is, of course, a matter of preference. Since the light on snowy moun-

tains is very strong, I use fine grain emulsions only. Regardless of the size of the negatives—but particularly for 35mm sizes—I use developers made up of elon and paraphenylene diamine. Of all the formulae I have tried, this has been the most satisfactory because of its stability and the grainless enlargements it yields.

Just a word about what to expect on your first ski-photographing trip. You'll probably miss out on a lot of good pictures for a while because your subjects whiz past you and disappear by the time you are ready to flick a shutter. Don't let that worry you. Just study the technique of skiing all the while you are banging away. Sooner or later you'll get the hang of anticipating action and timing. When that happens—watch your results soar like a champion ski-jumper.

SKIING PICTURES need not all be action shots. A restful pose tells its own story, and soft reflected light from snow is excellent for informal portraiture.



Glossies Without Rings

By GEORGE S. COWLAM



A GLOSSY PRINT can be as stubborn as a Missouri jenny mule. Try to strong-arm one of them into doing something that doesn't come naturally—drying fast, for instance—and you are apt to wind up with a print bearing as many rings on it as a weather map.

One way to speed up drying—and at the same time circumvent the danger of rings—is to rig up a contraption consisting of a dish towel, two strips of wood, several lengths of wire, four screw hooks, and a few moments of not-too-critical hemstitching with needle, thread and pliers.

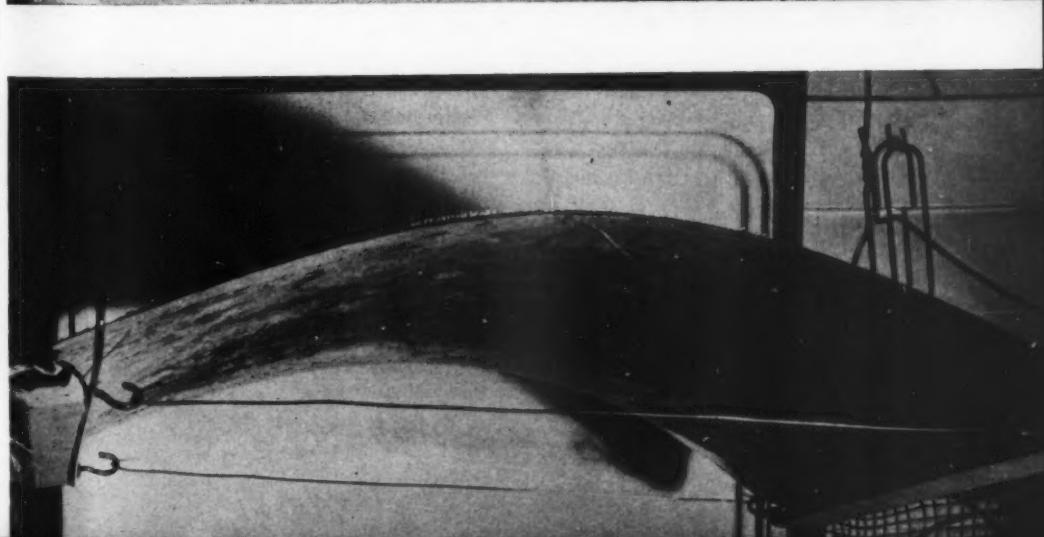
Place the ferrotype tin on the towel and cut the sides of the towel flush with the edge of the tin. Allow about a two-inch overhang on each end. The overhangs are doubled over and sewed to make hems

that enclose the wooden strips, which should be as long as the tin is wide.

Insert a screw hook through the fabric and into the wood about an inch from each end of each strip. Bend the ends of two pieces of wire into hooks, making them short enough so that the tin will be bowed when they are attached to the cup hooks.

Squeegee the prints to the tin as usual, place the tin print-side down on the towel, bend the tin enough to allow the cup hooks to be connected by the hooked wires, and then turn the whole shebang rightside up and stretch the towel smoothly to the surface.

Your prints now may be safely dried in front of an electric fan, on the radiator, over a hot-air register or atop the warming oven. Wire hangers prove useful.





MATHEMATICS OF THE TEST STRIP

By Beaty L. McDonald

VIRTUALLY every discussion of print making, whether in contact printing or enlarging, describes the test strip method of determining the proper printing time. Such discussions generally assume that the several steps of the test strip are to be given equal exposures, i.e., that total exposure times are to be increased by an arithmetic progression, 1, 2, 3, 4, 5 seconds, etc. Actually, to be of much value a test strip should represent total exposure times which increase by geometric progression. 1, 2, 4, 8, 16 seconds, etc.

A little consideration will show the former method, while the difference between 1 and 2 seconds is considerable, the difference between 5 and 6 seconds, for instance, is almost negligible because the latter gets only one-fifth more exposure than the former. Most of us learned back in our early contact printing days that to get any considerable increase in print density with a given negative and light source we had to at least double the

printing time. Let's try applying this knowledge to our test strip procedure.

At first it may seem a simple matter to increase the exposure of each successive step by the simple geometric progression, 1, 2, 4, 8, 16 seconds, etc., and thus achieve the desired result. But a little arithmetic will soon demonstrate the fallacy of this procedure. Remember, it is the *total* exposure time of each step that is important.

In the first place, if you proceed as I do by uncovering a small portion of the sensitive paper at a time, leaving a progressively greater area exposed for each successive step, you will get a final result like this:

Step	A	B	C	D	E
Exposure during 1st period:	1				
" " 2nd "	2	2			
" " 3rd "	4	4	4		
" " 4th "	8	8	8	8	
" " 5th "	16	16	16	16	16
Total exposure.....	31	30	28	24	16

(Continued on page 80)

ALTHOUGH an idea is the basic ingredient of a picture, there are three other ingredients essential to the success of the picture. The first is competent photographic technique; the second, a positive approach; the third, the ability to simplify. That mastery of these ingredients does not come easy is testified by the stacks of "rejected" prints at salons and exhibitions—but that the average camera fan *can* master them is proven by the "accepted" prints at the same exhibitions.

Photographic technique, of course, can be mastered by intelligent study and experimentation. Fundamentally it is a more or less mechanical ingredient whereas a positive approach, the second ingredient, is a mental obstacle to be overcome. If, for instance, someone suggests a good



A MONTHLY DISCUSSION OF PICTURES
BY AXEL BAHNSEN, A.P.S.A.-F.R.P.S.

picture idea to you and you immediately think of all kinds of reasons why it cannot be carried out, you have adopted a negative attitude. (Page 124, please)



FIGURE 1

PHOTO DATA

CLIP SHEET FOR PERMANENT REFERENCE

REVERSAL PROCESSING OF MOTION PICTURE FILM

by ralph haburton

You can process your own reversal or positive motion picture film at home, save money, and shorten the time between the filming and showing of your pictures. Positive film is economical as its price does not include the manufacturer's processing service and its high contrast makes it ideal for titles and animation, while reversal film should be used whenever live action is photographed. The additional cost is repaid by the superior results from its higher emulsion speed and color sensitivity.

Medium-speed panchromatic reversal films such as Eastman Super-X Reversal or Ansco Reversible Hypan are the easiest reversal films to process at home, but the faster reversal films can also be processed satisfactorily in this manner. Don't try to process reversal film in formulas intended only for positive film. For your convenience formulas for processing are included in this Photo Data Clip Sheet.

What Happens

In reversal processing, film exposed in a camera is chemically reversed to form a positive instead of a negative. There are several ways of doing this. The most common method includes five chemical steps: first development, bleach, clear, second development, fix. Rinses or washes follow each of these steps, and the film is re-exposed to white light before the second development.

The first development brings out a negative image in the usual manner, but this image is then bleached and removed and the remainder of the previously unexposed and undeveloped emulsion is then given an overall exposure which is developed. This will be a positive, since wherever there was the heaviest deposit of silver in the negative, there will be the least silver halide remaining, and where there was no negative image, as in deep shadows, there will be the most halide available for second development. The action of the bleach is to convert the silver image, brought up in first development, to soluble silver sulfate. This action can be considered exactly opposite to that of hypo, since the bleach effects the removal of the silver image without disturbing the undeveloped emulsion, while hypo removes undeveloped grains without affecting the silver image.

You can handle the film on rectangular racks, on cylindrical drums, on spiral reels similar to those used for still camera film, or in the Morse G-3 developer. With the Morse developer, a darkroom or changing bag is needed only for loading the reels and placing them in the tank and the whole process is simplified.

Short lengths of film up to 50 feet can also be reversal processed in open tanks, crocks or buckets; and after proficiency is acquired, lengths of 100 feet can be handled the same way. Uniform re-exposure of the film is difficult when the tank or bucket method is used and formula variations which eliminate the need for re-exposure are usually employed.

How to Process in a Morse G-3 Tank

The following procedure is recommended for processing 100-ft. lengths of Super-X or Hypan reversal films in the Morse G-3 developing tank. Developing times should be reduced for shorter lengths. Faster films require 50% longer first development. Formulas for the process are listed separately near the end of this article.

Step 1:

First development. Develop for 15 minutes at 70°F (21°C).

Step 2:

Rinse for three minutes. Eastman reversal films with a jet backing should be rinsed until rinse water is clear, indicating that backing is completely removed. Stubborn backing can be removed by gently abrading with the finger or a wad of cotton. The brown backing on Ansco film will come off in the bleach, which follows:

Step 3:

Bleach for 10 minutes at 68°F (20°C), or until no black image remains and the brown backing of Ansco film is removed. After three minutes of bleach, the film can be examined by white light.

Step 4:

Rinse for two minutes.

Step 5:

Clear for eight minutes at 68°F (20°C), or until all brown stain is removed and the image is a light yellow color, with clear highlights. It is safer to use two baths, changing to a fresh bath after four minutes.

Step 6:

Rinse for two minutes.

Step 7:

Open the window, in the tank, and re-expose to a strong light such as a photoflood or a 150-watt lamp about 10 inches from the film. Make three

PHOTO DATA

CLIP SHEET FOR PERMANENT REFERENCE

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passes with the film under water without changing speed or pausing.

Step 8:

Second development. Develop in D-72 for about five minutes at 68°F (20°C), or until slightly past the point where the image is brought out fully and the edges are a deep black. This developer can also be used diluted 1:1; or the first developer with the thiocyanate omitted can be used.

Step 9:

Rinse for two minutes in cold water or in a chrome-alum stop bath.

Step 10:

Fix for five minutes at 68°F (20°C). Any good hardening fixing bath can be used. There will be little or no halide remaining for this bath to remove, but the hardening action is needed to prevent physical damage and to hasten drying.

Step 11:

Wash for five to fifteen minutes.

Step 12:

Wipe film carefully or rinse in wetting bath. Hold the film by its edges and don't let fingers touch emulsion side. Emulsion is not at all fragile if the correct procedure is followed.

Step 13:

Dry on drying reels or drums, or in loops over a line. If you use a line, place paper clips through the perforations every 3 or 4 feet and fasten clips to line.

Due to long processing times and numerous steps, dangers of reticulation are present. The first developer should be used at 70°F (21°C), all other solutions at 68°F (20°C), except the rinses, which should be at 65°F (18°C) or less. Be sure your thermometer is correct, because some films invariably frill and reticulate at 72°F (22.5°C).

The formula for the first developer can be made up by adding 29 grains (2 grams) of sodium thiocyanate to each quart, or liter, of prepared D-19. Instead of sodium thiocyanate, 35 grains (2.3 grams) of sodium thiosulfate (hypo crystals) can be used or 35 grains (2.3 grams) of potassium thiocyanate. The quantity of thiocyanate can safely be doubled for Ansco film. Sodium thiocyanate is also known as sodium sulfocyanate.

Ansco reversible films have an anti-halation backing of brownish colloidal silver, which can be removed only by the bleach. It is bleached at the

same time as the negative image. The jet backing on Eastman reversal films is usually easily soluble in the wash following first development. The hard rubber roller mounted behind the window on the G-3 developer can be replaced with a viscose sponge roller of the same dimension, to aid backing removal. This replacement roller should be used only in Step 2.

If any backing remains after this step, it can be seen and removed in the wash following the clearing bath when it will not be affected by white light. This backing is more difficult to remove after the film is hardened in the hardening fixing bath, and if unremoved jet backing is discovered after fixation it is best to rub it off with a cloth or a pad of absorbent cotton dipped in a mixture of nine parts denatured alcohol to one part water. Don't use wood alcohol, and don't use too much of the mixture, or the film may turn milky or opaque.

All steps of the process given are carried to completion, with the exception of the first development, so any manipulation to alter results should be made in the first developer. Remember that in a reversal process prolonged development or increased silver solvent (sulfocyanate or thiocyanate) gives a thinner final image; shorter development and decreased solvent, a heavier final image. If the film is re-reversed, showing negative in some parts and positive in others, the bleach is too weak or exhausted, or the film has been light-struck during processing.

It is safer to use a fresh solution for each new batch of film, except for hypo, which can be used until it ceases to harden film. The life of the bleach varies with the type of film being used. The bleach deteriorates more rapidly with Ansco reversible films.

Table of Processing Instructions
(for 100 ft. of 16mm Super-X film)

Step	Procedure	Time	Temperature
1	First developer	15 min.*	70°F (21°C)
2	Rinse	3 min.	60°-45°F (15.5°-18.5°C)
3	Bleach	8-10 min.	65°-70°F (18.5°-21°C)
4	Rinse	2 min.	60°-65°F (15.5°-18.5°C)
5	Clear	8 min.	65°-70°F (18.5°-21°C)
6	Rinse	2 min.	60°-45°F (15.5°-18.5°C)
7	Re-expose under water		
8	Second developer	5 min.	65°-70°F (18.5°-21°C)
9	Rinse	2 min.	60°-45°F (15.5°-18.5°C)
10	Fix	5 min.	65°-70°F (18.5°-21°C)
11	Wash	5-15 min.	60°-65°F (15.5°-18.5°C)
12	Wipe carefully		
13	Dry		

* Vary developing times according to the length and class of film being developed.

PHOTO DATA

CLIP SHEET FOR PERMANENT REFERENCE

Recommended Formulas for Processing in the Morse G-3 Developing Tank

1. First Developer

Water at about 125°F (53°C)	24 fl. oz.	750 cc
Metol (or Elon)	32 grains	2.2 grams
Sodium Sulfite (anhydrous)	3 oz., 90 grains	96.0 grams
Hydroquinone	128 grains	8.8 grams
Sodium Carbonate (monohydrated)	1 oz., 380 grains	56.0 grams
Potassium Bromide	73 grains	5.0 grams
Sodium Thiocyanate	29 grains	2.0 grams
Cold water to make	32 fl. oz.	1.0 liter

2. Bleach

Water	24 fl. oz.	750 cc
Potassium Dichromate	1/4 oz.	7.5 grams
Sulfuric Acid,* concentrated	3/8 fl. oz.	12 cc
Water to make	32 fl. oz.	1.0 liter

*CAUTION—Always add acid to water, never water to acid.

3. Clearing Bath

Water	24 fl. oz.	750 cc
Sodium Sulfite (anhydrous)	5 oz.	150.0 grams
Water to make	32 fl. oz.	1.0 liter

4. Second Developer (D-72)

Water at about 125°F (53°C)	24 fl. oz.	750 cc
Metol (or Elon)	45 grains	3.1 grams
Sodium Sulfite (anhydrous)	1 1/2 oz.	45.0 grams
Hydroquinone	175 grains	12.0 grams
Sodium Carbonate (monohydrated)	2 oz., 280 grains	79.0 grams
Potassium Bromide	27 grains	1.9 grams
Water to make	32 fl. oz.	1.0 liter

5. Fixing Bath (F-5)

Water at about 125°F (53°C)	20 oz.	600 cc
Sodium Thiosulphate (hypo)	8 oz.	240.0 grams
Sodium Sulfite (anhydrous)	1/2 oz.	15.0 grams
Acetic Acid (28%)	1 1/2 fl. oz.	48.0 cc
Boric Acid, Crystals	1/4 oz.	7.5 grams
Potassium Alum	1/2 oz.	15.0 grams
Cold water to make	32 fl. oz.	1.0 liter

How to Process in an Open Tank or Bucket

If special processing equipment, such as the Morse G-3 developer is not available, film may be developed in a bucket, crock, or in open tanks such as are used for cut film. The film is stripped from the spool into a bucket of water, and the coils separated by hand during the five minutes it is pre-soaked. It is then transferred as a loose mass into the developer bucket. Rubber gloves should be worn, particularly when the hands are in the developer and bleach solutions.

After development, the film is lifted in the same manner to buckets containing bleach and clearing bath, with fresh rinses following each step. The film is gently agitated by hand throughout the process. White lights can be turned on after one minute of bleaching.

Only two buckets are necessary since the solution can be changed in one bucket each time the film is being rinsed in the other. Enamel, stainless steel, or hard rubber buckets should be used.

Developing, bleaching and clearing formulas are the same as for the Morse developer, except that the times are reduced by half. Since re-exposure by white light is not feasible, after the rinse following clearing, the film is placed in a sodium sulfide bath containing a mild alkali (to minimize noxious fumes). This formula is given below.

After the film comes up in a rich sepia tone (about 1 to 2 minutes) it is washed in five one-minute changes of water, sponged, and dried.

Sulfide Re-developer

Water	24 fl. oz.	750 cc
Kodalk	150 grains	10.0 grams
Sodium Sulfide	150 grains	10.0 grams
Water to make	32 fl. oz.	1 liter

Either the sulfide re-development or the G-3 re-exposure formulas can be used for rack and tank or drum processing. It may be necessary to remove the backing from reversal film, with a wad of cotton or a viscose sponge, after processing when racks or drums are used. Developing times should be cut to one-half the times used when processing with the Morse G-3 developer.

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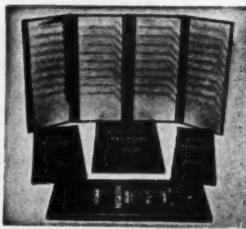
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TEST STRIPS

(Continued from page 74)

This, obviously, was not the result we wanted. Something has gone wrong with our calculations. Let's try reversing our progression, like this: 16, 8, 4, 2, 1, giving the first step the longest instead of the shortest exposure. Here is what we get:

Step	A	B	C	D	E
Exposure during 1st period:	16				
" 2nd "	8	8			
" 3rd "	4	4	4		
" 4th "	2	2	2	2	
" 5th "	1	1	1	1	1

Total exposure 31 15 7 3 1

This is much better, and might be good enough for most practical purposes, but it still is not a true geometric progression. However, if we look carefully at those final figures we discover that they do have a significant relationship. If we add one second to each total, the result is the true geometric progression we have been seeking. Evidently the entire strip needs to be given an additional exposure of one second. This may be done by giving the fifth step an exposure of two seconds instead of one (16, 8, 4, 2, 2), or it may be done by adding a sixth step with one second's exposure. In the latter case we will get a final result like this:

Step	A	B	C	D	E
Exposure during 1st period:	16				
" 2nd "	8	8			
" 3rd "	4	4	4		
" 4th "	2	2	2	2	
" 5th "	1	1	1	1	1
" 6th "	1	1	1	1	1

Total exposure 32 16 8 4 2 1

If a total exposure of 32 seconds is not enough, the table may be extended indefinitely by adding more steps at the beginning, each of which must receive double the exposure of the step which follows it.

Actually, in dealing with exposures of 15 seconds or more most of us find it easier to think in terms of even quarter and half minutes, and for my own use I have adapted the table accordingly. In my darkroom, in a spot where it can be read easily under the safe-light, is a card which reads cryptically:

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Zone

State

60	=	120
30	=	60
15	=	30
7	=	15
4	=	8
2	=	4
1	=	2
1	=	1

This simply means that if I give the successive steps of a test strip the exposure shown in the first column the total exposures will be those shown in the second column.

Obviously, not every test will need to be carried to 120 seconds. Select the exposure which experience tells you will be more than the maximum needed and begin your strip with the corresponding step. Thus, if you are sure the given conditions will not require more than 15 seconds' exposure, take the next larger step (to be on the safe side) and give your test strip exposures of 15, 7, 4, 3, 1, 1

seconds. If you are sure of the minimum exposure needed, the smaller steps may be crowded together on the strip, but do not omit any of them for that would destroy the progression of the totals.

If you prefer to begin by exposing the total area of the sensitive strip and covering successively greater portions thereof for the succeeding steps (and there are certain advantages to this method if the opposite habit is not too deeply ingrained), use the same table but start at the bottom, making exposures of 1, 1, 2, 4, 7, 15 seconds, etc.

There will still be times when of two adjacent steps on the test strip one will be too dark and the other too light and you will have to select a printing time somewhere between them, but with this procedure it should be possible to estimate the final exposure closely enough for all but the most critical exacting work.

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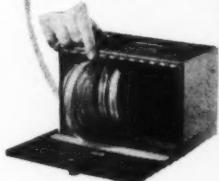
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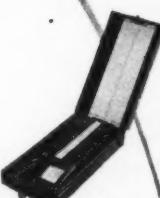
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Make your own blue flashbulbs by using clear ones which in some cases can be found these days, in spite of the shortage. Dip them in a solution of 3% mechanics layout bluing, 22% lacquer thinner, 75% clear lacquer. Hang to dry with base up. Prussian blue can be used when layout blue is not available.

—Chicago Color Camera Club "Reflector."

Every club member is cautioned about discarding trial prints; these should be completely destroyed beyond recognition. This is important. Last week when the rubbish was set out front for collection, it was noticed that some boys playing nearby, picked out some old prints to play with. The same thing might happen with very serious results in case of "Figure Studies." *Watch it please.*

—From "Record Shots" Photographic Group of Philadelphia.

John R. Hogan, FPSA, ARPS, will talk on "Controls in Projection Printing," Friday, January 18th, 1947, at the 185 North Wabash Building, Chicago, beginning at 8 o'clock. Mr. Hogan is chairman of the Pictorial Division of the P.S.A., and one of the leading salon exhibitors in the country. He will be in Chicago at that time to judge the Sixth Chicago International Salon of Photography, to be held at the Chicago Historical Society. The other judges will be Charles B. Phelps, Jr., FSPA, ARPS, and Earl C. Esty.

This lecture will be the second in a series of three given by the CHICAGO AREA CAMERA CLUBS ASSOCIATION. The first was by P. H. Oelman, FPSA, whose subject was "The Photography of the Nude," and the third will be by Harry K. Shigeta, FPSA, on April 11th. Mr. Shigeta will talk on "Critical Control in Pictorial Printing."



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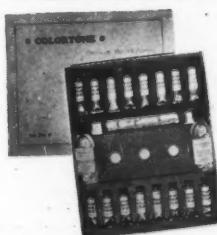
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\$3,500 FOR HIGH SCHOOL PHOTOS

The Second Annual National High School Photographic Awards—bigger, better, and offering more cash prizes than ever before—has just been announced by Eastman Kodak Company.

Opening February 15, and closing May 15, this competition offers high school pupils an opportunity to compete for prizes totaling \$3,500 in cash to help further their education, plus national recognition for their work.

There will be five classes instead of four. In each class a first prize of \$100 will be awarded, a second prize of \$50, and a third prize of \$30. One of the five first prize winners will be selected as the \$500 Grand Prize Winner. Thus, a young photographer may win as much as \$600 for a single snapshot.

In addition to the 16 major award winners, 75 awards of \$10 each, and 270 awards of \$5 each will be given, irrespective of class—a total of 361 awards. Eligible students may enter any or all classes.

The contest is open to any student who is attending daily any of the high school grades from the ninth to the twelfth, inclusive, in a public, parochial, or private school in the U. S.

Judges for the 1947 awards will include Helen Hayes, star of stage and radio, an ardent photographer; Norman Rockwell, artist and illustrator of human interest subjects, and Kenneth W. Williams, director of the Photographic Studios, Eastman Kodak Company.

Pictures must have been taken since May 15, 1946, by the person, under whose name they are submitted, but they need not have been

developed and printed by him or her. Any make of camera or film may be used.

Pictures will be judged on the basis of general interest and appeal. Photographic excellence or technique, while important, will not be the deciding factor.

Contestants may enter pictures in any or all of the five classes. Classes of entry include:

1. *Babies and small children*—Pictures showing characteristic expressions, moods, and activities of babies and small children; cute traits, serious or humorous.
2. *Scenes and Still-Life*—To be judged for pictorial appeal; ranging from landscapes, marine views, historical spots, street scenes, and buildings to "table-top" or miniature arrangements, flowers, bric-a-brac, etc.
3. *Hobbies and Recreation*—Pictures of people, young and old, engaged in any activity, such as sports, games, hobbies, recreation, and occupations.
4. *Animals and Pets*—Interesting portrayals of household pets (cats, dogs, birds), horses, or other farm animals, zoo animals, forest wildlife, etc.
5. *School Projects*—Classroom and assembly hall activities, fine arts activities, student government, and club procedures, etc.

To compete for the cash awards, students should obtain a rules folder and entry blank from their photographic dealer or high school and submit entries to the National High School Photographic Awards, 343 State Street, Rochester 4, N. Y., on or before May 15, 1947.



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Your Photographic Supply Dealer has complete Marshall sets, and separate tubes of color, both Regular and Extra-Strong. And remember, Marshall's free Color Consultant Service is always ready to answer any of your photo-coloring questions.



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2 1/4" x 3 1/4"

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For thorough Expert Performance . . . The Sun Ray Arnold Model "D" has no equal. A cool, compact, rigid, streamlined enlarger . . . easy to operate, yet has every modern practical feature. For the beginner or the advanced amateur.

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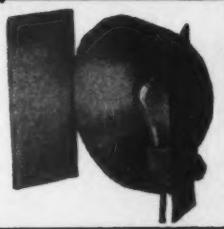
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For No. 1 Photoflood or 500 watt T20 bulb. Made of Aluminum Brown Wrinkle outside, Satin Finish inside. Diameter 8 1/2", Depth 5", with side shields.

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Now Products

A Note of Warning

"We understand that some dealers have purchased processing chemicals for Kodacolor Aero Film and that these are being recommended for the processing of Kodak Ektachrome Film. The processing chemicals as supplied to the armed services for Kodacolor Aero Film are not designed for Ektachrome and satisfactory results cannot be obtained when using them for Ektachrome. Processing chemicals for Kodacolor Aero Film contain certain ingredients which are toxic so that, unless handled under rigidly controlled conditions, the user is quite likely to develop dermatitis.

Because of the above reasons, we do not recommend these chemicals for use for Ektachrome Film."—*Eastman Kodak Company*.

Argus Slide Projector

AN improved model of the Argus PA Projector is in production and is being shipped in quantity. There is no change in the retail price of \$27.75.

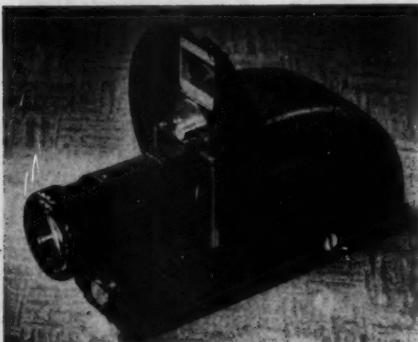
Featuring a new, coated lens with a rating of F:3.5 which replaces the former F:4 lens, the new instrument also has a simple cam-ejector which makes removal of slides much easier than before.

A compact carrying case has been manufactured and will soon be in volume distribution.

The new lens means an increase in light transmitted to the screen, and since all lens elements are coated, sharp, free-from-glare images can be projected.

Optical design of the projector lens has been improved in this latest model. Diameters of individual lens elements have been increased to eliminate any possibility of vignetting in the corners of projected images, and the three elements are mounted in an anodized aluminum mount which is step-bored to insure exact and permanent alignment of the lens.

The new slide carrier operates as in earlier models except that when it is rotated a cam



changes the position of the transparency after projection so that it may be easily removed.

The improved projector, as in the original model, has a 100 watt light source, specially tempered glass which absorbs 88 percent of the heat generated by the bulb, and an adjustable tilting device. For further information write Argus, Inc., Ann Arbor, Michigan.

Projector Stand

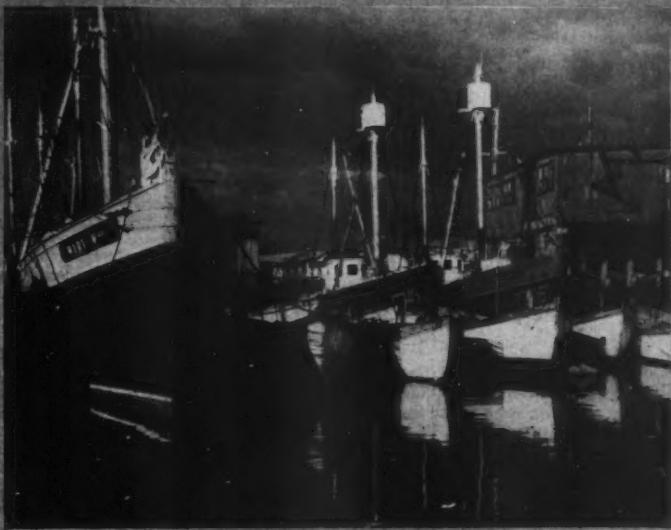
IF YOU have ever projected a film on a screen you perhaps have used a wiggly card table, a heavy sewing machine, dining room table, or desk as a stand for the projector. Aside from raising your temperature a few degrees, you probably got Holy Ned from the boss of the house for tearing it all apart, if you used something sturdy. This being true, you should be interested in the new Pole Projector Stand as it is sturdy, rugged, compact and light in weight. When closed this stand is 25½ inches, extended the maximum height is 52 inches. All fittings are made of polished aluminum while the tripod legs are black aluminum. The stand has a patented locking feature for leg extension by which the leg is locked at any position with a slight twist of the wrist. The



platform is made of formica and measures 14x16 inches, enough room for all but sound projectors with space left to pile on those extra reels or slide boxes. It will not give you the trouble of a folding deck chair when you set it up as the operation is simple and easy. Priced at only \$18.00 list, it is available for immediate delivery. If your dealer hasn't it in stock have him contact Camera Specialty Company, Inc., 50 West 29th St., New York 1, N. Y., and they will see that you get one.

Toner Changes Name

A RESEARCH program has just been concluded on McKeon's Sepiatorner, a chemical marketed by Sulphur Products Co., Inc., of Greensburg, Pa. This product is now particularly designed for producing sepia shades on all bromide papers, and in view of this fact, it will be known as McKeon's Bromidetoner as the manufacturers feel that the new name more fittingly describes their improved product.



**for color...for black and white...for flash photography—
...better pictures are yours with a Perfex**

Capture the glory of natural color—the rich tone scales and
sparkling detail of black and white with this modern
Perfex 35mm camera.

Regardless of subject
you can be sure of your
pictures with a Perfex.



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WITH F:2.8 LENS \$91.00 Tax Incl.

FLASH GUN \$8.75 Tax Incl.

CARRYING CASE \$8.50

At your dealer's

CAMERA CORP. of AMERICA
844 WEST / DAVIS STREET • CHICAGO 7

Special Photoflash Cells

THE CELL suited to photoflash work is in a class by itself, for the professional photographers on newspapers, magazines, and in news service cannot take chances. Bright Star Battery Company, Clifton, New Jersey makes a cell created especially for the photo supply trade, which outperforms any flashlight cell, most of them by 200 to 400 per cent.

To prove its worth in photoflash work, a cell must deliver a large flow of current almost instantaneously. That is, within a few milli-seconds after the trigger is pressed, thus firing the flash bulb while the shutter is open. This fast action is absolutely necessary. Ordinary flashlights are not built to meet the need for such high speed. To give this service, the Bright Star Photoflash cell is offered on dealers' counters everywhere. Ask for them if you don't see them.

A NEW material to be used by the movie maker and photographer, is called Satinglas. It is a glass fibre sheet of spun glass that will bend and can be cut with scissors. The sheets come in five colors as well as black and white. The Prospect Products Co. have made up attractive movie-title kits for those interested in making Kodachrome titles.

The title kits come with 12 x 14" Satinglas backgrounds and 1 1/16" die-cut letters and numerals. These characters stay fixed in any



position, even lean away from the backgrounds without the aid of pins, glues or other adhesives. Changing of lighting positions create numerous effects and professional-like Hollywood touch.

The color title kit comes with six background sheets of assorted shades and 360 letters and numerals of assorted colors which sell for \$6.45. The black and white title kit comes with one black Satinglas background and 120 yellow letters and numerals, selling for \$2.50.

Satinglas can also be purchased by the photographer in sheet sizes up to 3 x 4 feet, or by the roll. It can be used as attractive mats to frame photographs and for photo lamp shades to diffuse light.

Free booklet explaining other services ex-

EVERY *Cinklox*

has these modern features

- ✓ Wollensak Lens
Velostigmat f2.5 elements coated.
Color corrected. Standard mount.
Lens interchangeable, Sun shaded.
- ✓ Visual Footage Indicator
Keeps you informed constantly of number of feet of film used in the camera, as the roll is expended.
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Keeps camera running, thus allowing operator to get in picture.
- ✓ Three Operating Speeds permit filming at s-l-o-w for study, fast for sticky effects, or normal.
- ✓ Direct View Finder
is positioned to avoid interference by hat. It is direct, brilliant. Includes telescopic range finder.
- ✓ Exposure Table
located on front of camera. Easy to see; read, understand.
- ✓ AND MANY OTHER FEATURES
TO BE FOUND IN MOST EXPENSIVE MOVIE CAMERAS.

It's EVERYBODY'S
MOVIE CAMERA!

The New *Cinklox*
16 MM MODEL 35

At last a home movie camera priced within the reach of all! So simply and ruggedly constructed any amateur can achieve professional results with this sure, precise camera-in black and white, or color.

RE-LIVE HAPPY EXPERIENCES
WITH *CINKLOX* MOVIES.
ENJOY THE THRILL OF
SEEING YOURSELF AND
FAMILY ON THE SCREEN...

If your photographic dealer is not supplied, write to
CINKLOX CAMERA COMPANY
1113 YORK STREET, CINCINNATI 14, OHIO

The Biggest News of 1947

A NEW LOW PRICE

The Sensational 4 x 5 COLD LIGHT ENLARGER

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UP

PRICES

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made by NATIONAL INSTRUMENT CORP.

THIS 4 x 5 COLD LIGHT
ENLARGER

has been selling so rapidly NATIONAL INSTRUMENT CORPORATION is now able to pass along the savings of mass production . . . a \$35.50 saving for you.



PERFECTION

PRINTING for Color or Black-and-White
with this 4 x 5 COLD LIGHT ENLARGER

- ★ First enlarger designed for color with constant cold light, 3100° Kelvin temperature, and featuring double negative carrier.
- ★ Takes all negative sizes from 35 mm. to 4" x 5" in dust-free stainless steel negative holders.

- ★ Rigid column insures against vibration, while counterbalance provides ease of operation.
- ★ Professionals prefer the 6500° Kelvin Cold Light unit for fast black-and-white enlargements, available now as optional equipment or may be purchased as an accessory.

SEE YOUR DEALER, OR WRITE US FOR FURTHER INFORMATION

NATIONAL INSTRUMENT CORPORATION

2332 BELLAIRE BLVD.

HOUSTON, TEXAS

tended to the movie maker and photographer will be sent upon request.

Kits can be purchased from your dealer or direct from the Prospect Products Co., 5 So. 6th Ave., Mt. Vernon, N. Y. Satinglas is manufactured by the Glasfloss Corp.

Dual Film Splicer

THE HOLLIS 555 Film Splicer accommodates both 8 and 16mm film. It is of the dry-scaper type and requires only three operations



to make a splice. The splicer is made of steel, has a plated finish, and is mounted on a lacquered wood base. "5 5 5" is its name and \$5.55 is its price. Yes, it is tax free. Made by Hollis Photo Products, Hollis, New York.

Filter Selector

MORE ACCURATE highlight and shadow control for black and white pictures, is promised by a new photographic accessory, the Harrison Filter Selector. This glass, when used in conjunction with the Harrison Viewing Glass, permits the photographer to see, before he takes the picture, just the control that each different filter will give to the highlights and shadows in the scene for his black and white photography. Then he will have indicated to him the proper color filter of the correct density to use in order to get whatever effect he desires. Each set consists of five Selector Glasses that cover the complete range of popular filters. Each individual glass is marked with the range of densities it covers.

The Harrison Viewing Glass is mounted monocle fashion, in stainless steel with a sturdy neck cord. By viewing a prospective scene for a picture through it, the photographer is able to interpret how its varied colorings will appear in black and white in the finished picture. It does this by bringing the color sensitivity of the eye down closer to the color sensitivity of the film. Used as standard equipment by professional Hollywood photographers for over ten years, it is now generally available to amateurs and professionals; one for panchromatic film and one for orthochromatic film. Your dealer has both of these items or can obtain them for you from Harrison and Harrison, 6363 Santa Monica Blvd., Los Angeles 28, California.

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Projection on Metal, Glass, Paper, Plastics, Wood, etc.**

Let your imagination go! Find new uses for your photography! Put those pictures you prize on display in hundreds of interesting ways. Make photographic murals of any size. It's all possible with new Martin Multi-Mulsion.

Martin Multi-Mulsion is a simple, practical emulsion which sensitizes almost any surface for photographic reproduction. Ready to use, it is applied in one coating with a brush or cloth. Works with ordinary darkroom equipment.

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BLOW BY BLOW DESCRIPTION . . . OF THE LOW DOWN IN, AROUND AND BEHIND HOLLYWOOD
 15 FULL COLOR 50c ANSCO COLOR 2x2 SLIDES
 PLUS TALKING PICTURE SYNCHRONIZED SOUND TRACK ON RECORD TO PLAY ON ANY PHONOGRAPH
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THE NEW SONGS
BANG, BANG, BANG!
HITCH HIKIN' INDIAN!
GRAND DAD FROG!
THE PRAIRIE DOG LAMENT!

ALL IN ONE BIG TALKIE ALBUM
 ASK YOUR DEALER FIRST
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 THIS HANDY ORDER FORM TODAY
 HOLLYWOOD FILM GUILD, 5319 HOLLYWOOD BLVD., HOLLYWOOD

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I NOW OWN A 8MM 16MM SOUND HOME MOVIE PROJECTOR

Camera Tripod

A CAMERA steadyng device, the Ambol Kanepod, is now available to movie and still photographers.

This accessory, a combination walking stick and camera support, was developed for photographers faced with the problem of taking a heavy tripod along on trips or into crowded places, such as at football games, where their reception would be mildly hostile, to say the least.

The Kanepod, made of light-weight, yet sturdy, aluminum alloy, can be carried by its buckskin loop or used as a walking cane. Its threaded screw top will fit all standard tripod sockets and, when not in use, it is covered with an aluminum crackle-finish cap. The bottom of the unit is fitted with a solid rubber foot for firm stand. It measures 36 inches when closed, 5 feet 8 inches when fully extended.

A low-priced accessory, it is available for immediate delivery at all photo shops or can be obtained by writing to The American Bolex Co., Inc., 521 Fifth Ave., New York 17. Price: \$6.75.

Ektar Lenses Again Available

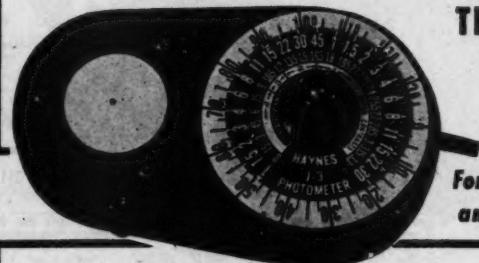
KODAK'S LINE of Ektar Lenses f/6.3—intended for general purpose commercial and industrial photography—is again available. Designed to provide excellent definition at all apertures, and to keep lens aberrations to a new absolute minimum, these lenses are now completely "Lumenized" with Kodak's extra-hard magnesium-fluoride lens coating.

Available in four different focal lengths—8½, 10, 12, and 14-inch—mounted in barrel or in Ilex Synchro Shutter, these Kodak Ektars f/6.3 are suited for picture taking in either black-and-white or color. Among those lenses mounted in shutters the 8½-inch lens is mounted in a No. 3 Ilex Acme Synchro Shutter with speeds up to 1/200 second. The 10-inch and 12-inch lenses are mounted in a No. 4 Ilex Acme Synchro Shutter with speeds up to 1/150 second. The 14-inch lens is mounted in a No. 5 Ilex Universal Synchro Shutter, the top speed of which is 1/50 second. Your local dealer should be able to advise you of the price or write to Eastman Kodak Company, Rochester 4, N. Y.

HAYNES J-3

Photometer-Densitometer

THE PRECISION
ENLARGING
METER



For both Black and White
and Color Enlargements

For TIMING YOUR ENLARGEMENTS

and CHOOSING THE PROPER PAPER.

No technical knowledge, gray scales or experience required.

In These Two Fundamental Uses, the
Speed and Precision of the Haynes
Photometer is Still Unmatched.

Anasco has chosen the Haynes Photometer-Densitometer to use and recommend for Printon color prints

because of its permanent* high accuracy. It is invariably the choice of experts and laboratory technicians.

PRICES—Model J-3 (Illus.)—\$9.45
Model K-2 (Same but with view-
ing lens & twin controls)—\$12.95

*The first Haynes Photometers built in 1938 are still giving accurate
and dependable service. Ask the man who uses one!

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A new 1947

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Screen will delight any picture fan

Pictures "POP OUT" with amazing realism when projected on the New 1947 Radiant Screens. Black and white pictures stand out in clear, vivid contrast . . . colors are rich, deep and natural. Radiant's bright, white "Hy-Flect" glass beaded surface is the secret of screen performance. The thousands of tiny glass beads which make up the Radiant screen surface reflect more light instead of absorbing it . . . giving you clearer, brilliant pictures. The New 1947 Radiant Screens give you all this—



Plus all these Wonderful Exclusive New Features



1. Automatic Leg Opening (Pat. Pending)—which makes tripod legs fly into position instantly.
2. Screen Leveller (Pat. Pending)—for horizontal levelling of screen when floor is uneven.
3. Shockproof Safety Catch—to prevent screen from being jarred off when in position.
4. Feather Touch Adjusting Handle (U.S. Patent)—for smooth, easy adjustment of screen at any height.
5. Double-Action Auto-Lock (Pat. Pending)—enables quick adjustment of screen into any position—and instant conversion from oblong sizes (for movies) to square sizes (for slides).
6. Built-in Shock-Absorbers (Pat. Pending) that assures longer screen life.
7. Automatic Leg-Lock.
8. New large-size non-slip Rubber Ball Tripod Feet.
9. Improved Stronger Triangular Steel Tube construction.
10. New Streamlined Design and Duo-color Scheme.
11. Automatic Leg Adjustment.
12. Finger Grip Carrying Handle.

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BETTER SCREENS FOR BETTER PROJECTION

As a result of these—and other important features—Radiant Screens set up more quickly and easily, hold more firmly in position, offer most convenient adjustment for different projection conditions—and add more pleasure and effectiveness to all types of picture projection.

SEND FOR FREE SCREEN GUIDE

Radiant has prepared a 32-page illustrated booklet, "Secrets of Good Projection," which gives you information on proper screen sizes, correct projection lenses, tips for improving projection and many other interesting facts. Mail coupon today for your **FREE** copy—and full information and prices, on the complete line of Radiant Portable, Wall, Ceiling, Table Screens.

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Gentlemen: Without obligation, please send me free copy of 32-page illustrated book, "The Secrets of Good Projection." Also circular showing complete line of Radiant Portable, Wall, Ceiling and Table Screens.

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New Catalogue

A CATALOGUE, which offers 72 pages of the latest photographic equipment and accessories obtainable at Penn Camera Exchange, Inc., is available. It contains full illustrations, descriptions and price information. Bearing in mind the many new cameras and other articles that will appear on the photographic market, this catalogue was created in loose-leaf form to make possible the addition of new pages whenever new items are announced.

When writing Penn for this free catalogue, photographers will not only be brought up to date on existing equipment, but will also be certain of receiving pages describing new items as they reach the market. It will be appreciated if you mention MINICAM too, as the place where you saw their offer. The address is: Penn Camera Exchange, Inc., 126 West 32nd Street, New York 1, N. Y.

Color Transparency Evaluator

Dealers will be interested in a color transparency evaluator for use on their counters which is simple and economical yet scientifically designed to eliminate the guesswork in advising a customer of the quality which can be expected from transparencies submitted for printing. This viewer was designed to sell at a price every dealer can afford and will be distributed by Technifinish, Rochester, N. Y., at cost. It has been emphasized that the viewer is available to every dealer, whether

or not he is a Technifinish dealer.

Every day, transparencies, unsuitable for printing, which appear quite pleasing by projection, are sent to the processor. The best possible print is made with the available materials, but the customer is disappointed. He rejects the work, and is reluctant to submit other transparencies. Techniflex, as the evaluator is named, permits the customer to view his transparency approximately as it will appear when printed, thus sorting out the unsuitable transparencies.

A color transparency is generally viewed by transmitted light from a bright source. The highlight intensity is in this case limited only by the brightness of the source itself. A color print, on the other hand, is viewed by reflection, the light being diffused or scattered from the print as it is reflected. Therefore, only a small percentage of the light striking the print reaches the eye, and the ultimate brilliance under ordinary conditions is many times lower than that of the transparency, even though the print be brightly illuminated.

The Techniflex evaluator provides a means for obtaining a uniform field of diffuse or scattered light of a brightness equal to the average intensity of a color print. The colors of a transparency when viewed in this light field are thus limited to this brightness and the effect is similar to a print of the transparency when viewed by normal light.

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Learn to be an expert photographer. Have a profession of your own — one that's both interesting and profitable. Here you are taught by experts headed by William Gerdes of international fame. Class-room instruction, group lectures by authorities, individual projects wherein you use the most modern equipment and methods — all carried out in this modern school located on the fringe of the Yale Campus.

Classes in Portrait, Commercial and Direct Color Photography.

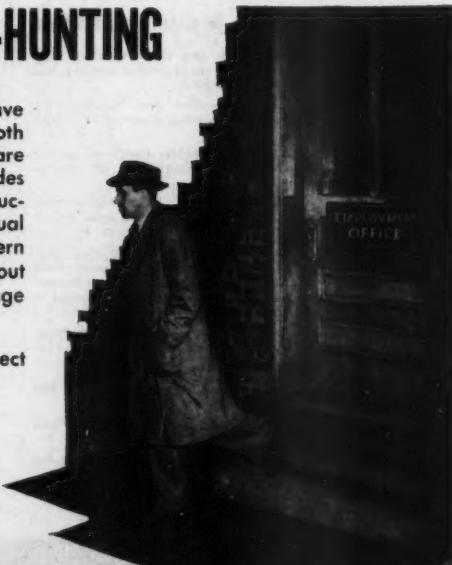
An accredited school for Veterans.
Enrollments now being accepted.

Write for Catalog PT 7



PROGRESSIVE SCHOOL OF PHOTOGRAPHY

217 Park Street, New Haven 11, Conn.





What's your *film speed* number? The glass dial of calculator ring is rotatable. Adjust it so the arrow (for black-and-white) or green dot (for color) is "frozen" over the proper film speed number. DeJUR was FIRST to utilize new A. S. A. film speeds.



Where does the pointer point? Right at the calculator ring. No duplicate light scales to match up with possibility of error. Move the ring so that the arrow (or green dot) is aligned with the bar on the stationary dial indicated by the pointer. DeJUR was first with a direct-reading scale.



What's your exposure? "Time" and "f" scales are now matched for correct exposure—automatically. It's right, too—because light acceptance is restricted to that of the average camera lens.

High-precision manufacturing makes the "Autocritic" the aristocrat of meters. Electro-mechanical movement of laboratory-instrument exactness... jewelled bearings... rugged coil... special Alnico magnets. Sealed against moisture. DeJUR-Amico Corporation, 45-06 Northern Boulevard, Long Island City 1, New York.

More of the Equipment You Need
... for the Pictures You Want



DeJUR "1000"
film projector—
1000-watt lamp,
other features.



DeJUR "Versatile"
enlarger—light-
tight, ventilated;
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DeJUR 3D
exposure Meter—
absolute accuracy
at lowest cost.

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SEE THE "AUTOCRITIC" AND THE "CINE CRITIC" FOR MOVIES AT YOUR DEALER'S

NO OTHER METER
GIVES YOU

Perfect Accuracy

AS EASILY!

You get the right exposure every time
when the "Autocritic" reads the light!





REVERE "88" CINE CAMERA

With F2.5 Coated
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Revere Turret F2.8 \$110.00
1 1/2" F3.5 Telephoto. 48.00
Wide angle lens... 29.95

If order to be sent C.O.D.,
at least 25% deposit must
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Complete Feature Programs

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The outstanding "March of Time," now
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35MM Quality DEVELOPING

INDIVIDUAL ATTENTION EACH
NEGATIVE

No automatic or mass production machinery used. Your film fine grain developed, color prints free from scratches, dust, spotting, and other damage. Exacting workmanship, highest quality developing. Write for FREE

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1947's GREATEST HOME MOVIE

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IN FLAMING KODACHROME

See Jan. 20 issue planes attack! See them
shot down in flames! See A Carrier Ex-
plosion! Official Navy Films.

8mm, 20 ft., color, \$4.00; 8mm, \$1.75.
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Good News!

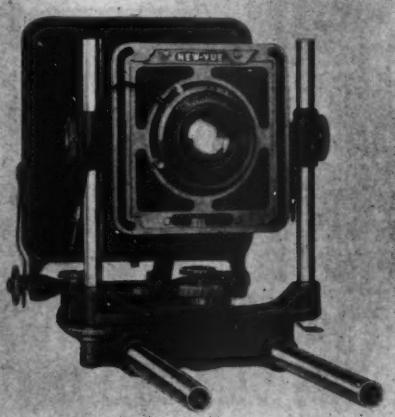
THE WOLLENSAK Optical Company, Rochester, N. Y., announces that it is planning no increase at present in the prices of its photographic and instrument lines. The company's decision to "hold the line" on prices followed the recent rulings decontrolling prices on photographic equipment.

Wollensak products which will remain at "pre-decontrol" prices include Wollensak lenses and shutters for still cameras, 8mm and 16mm motion picture lenses, enlarging lenses, projection lenses for slide and cine projectors, filters and lens accessories, and such Wollensak instruments as Prism Binoculars and Rambler Field Glasses.

Currently the major part of the firm's lens and shutter production is being delivered to leading manufacturers of American-made cameras, enlargers and projectors to help production of photographic equipment. Limited quantities of Wollensak Binoculars and Wollensak Rambler Field Glasses are being supplied through Wollensak's dealers.

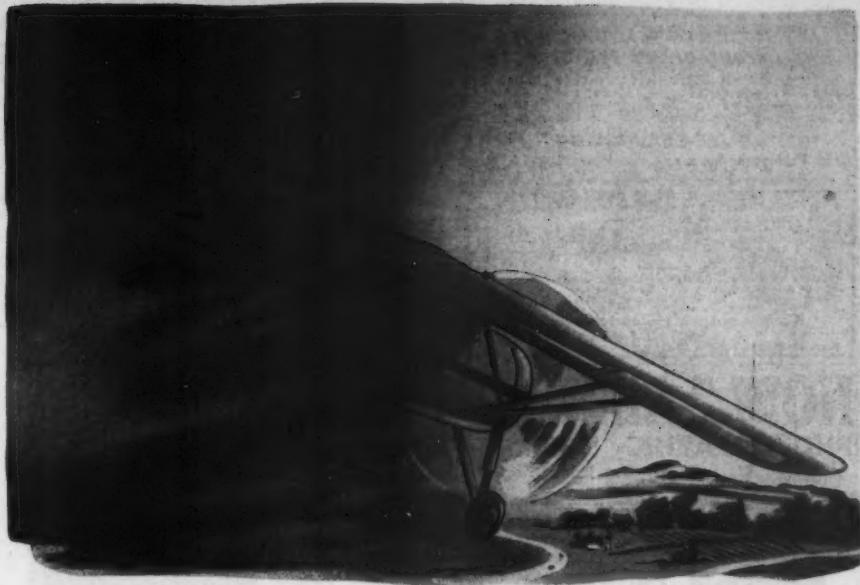
Two New Cameras

ADVANCED amateur photographers who need a box to create or eliminate "impossible" distortions will probably greet the Newton New-Vue 4x5 Camera as the "doggendest contortionist" since the India Rubber Man. The Newton product all but turns corners, thanks to nearly limitless adjustments, combining every tilt and swing in the book—plus a few others. Twenty-inch bellows extension permits



use of lenses up to sixteen-inch focal-length, provides up to four times magnification when used with wide-angle lens. Compression of bellows to 3 1/2 inches allows shots to be taken when an extreme wide-angle lens is used.

For diagonal plane displacement, a 20-degree forward or backward tilt and 40-degree angle swing of front and back members is possible. Another advantage is the 2 1/2 inch rise and 1 1/2 inch drop of the front. Rotation of the back through 360 degrees, with full field



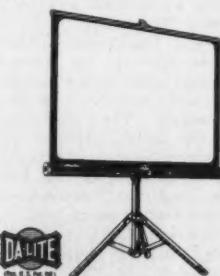
Take your pictures out of the FOG!

Did you ever come suddenly out of a cloud bank and notice how clear the daylight made everything around you?

A change from an old projection screen to a new Da-Lite Screen can make just as great an improvement in the quality of home movies and slides. Da-Lite's new Glass-Beaded Screen fabric takes projection out of the fog. It reveals, in sharp relief, details that before were obscure or lost. It

makes black-and-white scenes snappier, and gives color pictures new brilliance and beauty.

Da-Lite's patented process of super-imposing specially selected glass beads evenly on a neutral white, plastic-coated fabric has set a new standard for efficient light reflection and sharp, clear projection . . . Ask your dealer for a Da-Lite Screen today and take your pictures out of the "fog." Write for literature! Da-Lite Screen Co., Inc., Dept. 2-M, 2723 N. Crawford Ave., Chicago 39, Ill.



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coverage at any point, completes the lineup for perfect results in portraiture, landscapes, architecture, interiors, copying and macro-photography.

Press camera enthusiasts have not been forgotten and are offered the Newton 4x5 Speed-Vue all-metal camera. A single knob moves the back and front of the camera in either direction, simultaneously, for focusing. The 3 1/2 to 10" bellows extension on the telescoping chassis provides compactness, and permits the use of many lenses. The front has rise, swing,



tilt and shift, so that the photographer may secure excellent overall focus. The handle is carefully placed at the center of gravity, for maximum stability.

It is designed to have ample space for range finder and flash equipment and takes standard Graphic holders and lens boards. Newton Photo Products, 4720 E. Washington Blvd., Los Angeles, California, manufacture both of these products and they are now available from dealers.

Leakproof Battery

A NEW, improved battery for photoflash guns, called the Ray-O-Vac Leakproof Photoflash, has just been announced by the Ray-O-Vac Co., Madison, Wisconsin.

Like the Ray-O-Vac Leakproof battery for flashlights, the new battery for photoflash guns is uniquely constructed, being completely encased in steel, and carries a guarantee against battery leakage. The warranty, as imprinted on each cell, reads, "If your photoflash battery container ever is damaged by corrosion, leakage, or swelling of this battery, send the container and the batteries to us for adjustment at no extra cost to you."

In addition to insuring flashgun protection, the newly perfected battery delivers higher amperage to insure dependable "flashing." The sealed-in-steel feature also prevents drying up of the batteries when the flashgun is not in use. The batteries retail at 2 for 25 cents at your local photographic store.

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GADGETS, KINKS AND SHORT CUTS

Double Developing Tanks

NEEDING a developing tank that would hold more than one reel, and as it was not necessary that it be light-tight, I struck on the idea of using syringe graduates which are procurable at most drug stores.

These graduates hold about two quarts each and are large enough to take two standard



size developing reels or one film pack developing holder. They will also hold eight cut film holders of $3\frac{1}{4} \times 4\frac{1}{4}$ size or smaller.

Wax drippings from a candle can be used to seal the drain spout at the bottom of each tank. As the tanks are not light-tight they must be used in a darkroom.—*Lyman Huntington*.

Emergency Bottle Cap

WHEN a screw cap or cork is not available for a certain size bottle and chemicals should not be exposed to air, a simple way to provide an air-tight cover is to place a piece of a rubber balloon over the neck of the bottle and to tighten the balloon with a rubber band. Slice off the rim and the neck of the balloon so that it can go over the bottle easily.—*Robert I. Levinson*.

Keeping the Shutter Open

ON shutters that have provision for "bulb" but not for "time," a spring clothespin clipped



onto the plunger of the cable release will hold open the shutter for as long as is desired.—*H. Klein*.

Adjusting Flow in Washing Films and Prints

AS SO MANY of us have to use the sink or bathtub for washing I have been interested in reading about all the elaborate contraptions for adjusting top and bottom flow—some of them would require a plumber to set up and operate. I have solved the problem to my own satisfaction by taking a tip from the old time bartender who, when he wanted to make a shaker top for his bitters bottle, just took an ordinary cork and made a triangular cut, vertically, down the side of the cork. I have gotten several corks that fit sink and tub outlets and have made different size cuts in them. In this way I can adjust the bottom flow by the cork used—top flow is controlled by the outlet that is built into the sink or tub.

If, however, I want to use only a bit of water in the bottom of the tub I take a two hole chemist's rubber stopper, of the size to fit the tub outlet, and run a short piece of glass tube the exact length of the stopper through one hole—this is my bottom outlet—and a longer one through hole number two—the length of this second tube controls my depth of water. The flow of water from the tap is adjusted to keep the water level up to the top of the longer tube.—*Thomas Hull Prendergast*.

Slide Mailer

EXPERIENCING difficulty in sending my slides to various parts of the country because of the damage that the packaging received, I solved the problem by making a mailing container out of wood and plywood. Apple boxes, orange crates, or similar shipping containers also yield suitable materials.



As the illustration shows, the mailer consists of two pieces of plywood approximately $4\frac{1}{4} \times 4\frac{1}{2}$ inches, $\frac{1}{4}$ -inch thick, separated by two wood blocks $\frac{3}{32} \times 1$ inch, $4\frac{1}{2}$ inches long. The pieces are glued and nailed together and then sanded well. A coat of shellac or varnish can be applied if you wish to dress it up. Before applying either one, your name and address can be lettered on both sides and the identification of the mailer is always available. Use one of your slide boxes as a spacer when gluing up.—*Karl Baumgaertel*.

Emergency Tray

AN extra or emergency tray can be made by melting wax like that used in canning and pouring it into a box lid of the desired size. The wax will make the lid waterproof.—*Trêmeine Spencer.*

Softening Stiff Bellows

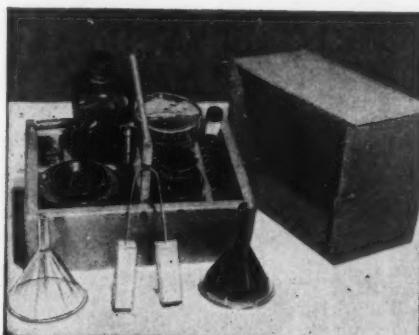
A STIFF bellows can sometimes be softened by rubbing it with a rag moistened with castor oil or sweet oil. It will be necessary to repeat the treatment daily until the leather becomes soft and pliant.—*S. Ziegler.*

Flash Diffuser

A DIFFUSER for a flash bulb can be made by sewing a silk handkerchief to a stiff wire circle, then soldering two battery clamps to the rim of the circle and attaching them to the reflector.—*Marvin Freeling.*

Portable Developing Equipment

MANY of us who do not have running water in the dark room have to use the kitchen sink after loading the tank with film. Invariably, some necessary equipment is forgotten, necessitating several trips back to the dark room. To relieve this situation I made a little carrying case with compartments for all my film developing equipment.



My case contains the following: One film tank, one quart of fine-grain developer, eight one-ounce bottles of replenisher, one pint of fixing solution, one sixteen-ounce graduate, one tank thermometer, one plastic funnel (for developer only), one plastic funnel (for fixing solution only), one pair of sponges, one jar of cotton for filtering developer after using, and three pairs of film clips. You may add short stop if you desire to. The case has a dust-proof cover with a handle in the center as an aid to carrying.—*R. F. Butts.*

Agitation

TO INSURE even agitation while making prints, place a pencil under the center of the tray and rock the tray back and forth. This will avoid spilling the solution and will aid in giving proper agitation.—*Larry Greenwald.*

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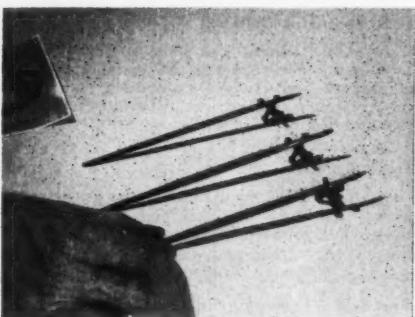
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Brush Racks

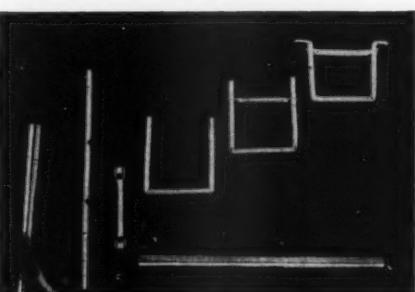
WHEN coloring pictures, photographers sometimes have difficulty in placing their brushes so they don't roll and smear up the surface of the print. A few jacks, the kind that children play with, will remedy that situa-



tion. The jacks have V-shaped grooves in which the brush tips can be rested to keep them off your work bench. Use one jack for each brush and keep them in a specific order for efficiency. Jacks can also be used to hold retouching pencils.—William Swallow.

Inexpensive Film Hanger

A FILM hanger can easily be made from a piece of Sears Shower Tile Trim which I procured for twelve cents per foot. It takes approximately 12 inches of this trim to make one holder so the total cost is not over fifteen cents each.



Using a purchased hanger for a pattern I cut the plastic trim with a V notch where the bends were to be made, then heating over a gas stove flame softened the material sufficiently to allow these bends to be formed. To reinforce the corner joints I laid a scrap piece of plastic on the joint, applied a hot iron, and melted the scrap plastic into the cut, forming a weld. The square end of an old carpenter's bit was heated and pushed through the plastic to make the holes in the retainer that slides up and down the side rails of the hanger. To aid in bending I made a wire form around which to shape the material. The various steps necessary to make these holders are shown in the photo.—Roy Rowe.

SUPERFLASH photo by C. O. Schlaver,
Kewanee Star-Courier



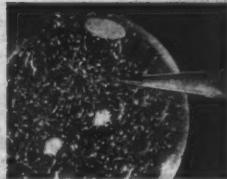
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12" Turner Reich Convertible F6.8, Betax shutter with cable release (covers 8x10)
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20" Bausch & Lomb F5.6 Telephoto
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Young America Films, Inc., a progressive newcomer to the educational film field, announces that all future releases will be Vap-Orated. No charge will be made for this added service to schools, which results from six months study of the comparative advantage of various film preservation methods. Action at this time has been stimulated by the number of schools requesting this service. Young America Films begins this VapOrating service with the release of its latest productions, MAGNETS, WHAT MAKES RAIN, and THE FLOW OF ELECTRICITY, the first three releases in an extensive elementary science program.

Formation of a new company, United World Films, Inc., for the purpose of producing and distributing 16mm and 8mm entertainment, educational and religious films, has been announced by N. J. Blumberg, president of Universal Pictures Company, Inc.

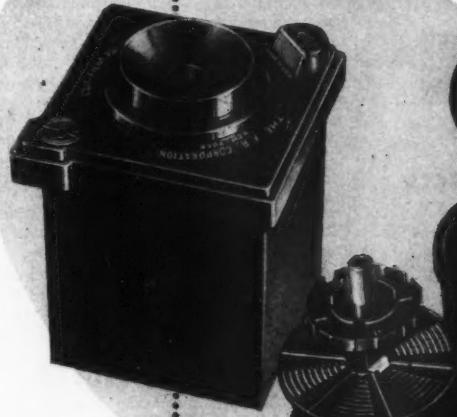
In forming United World Films, Inc., a wholly owned subsidiary of Universal Pictures Company, Inc., it was also made known that the entire sub-standard library of the Bell & Howell Company, known as Filmosound Library and comprising 6,000 subjects, has been purchased. The rapid and continuing expansion of Bell & Howell's activities in developing and manufacturing fine photographic equipment thus is accorded top priority by the Chicago firm, which originally pioneered in the film library field mainly to provide adequate film subjects for the benefit of users of its 16mm equipment.

The Filmosound Library has achieved worldwide recognition as a source for 16mm films of all kinds, and has attained the undisputed leadership originally planned for it. Having thus accomplished its original purposes in establishing the library, and with a realistic view toward maintaining its position of leadership in the manufacture of precision equipment, Bell & Howell thus is consolidating further its post-war status in the photographic industry. In addition to the film library, the entire film operating personnel and the film branch offices in Chicago, New York, Washington and Los Angeles, together with the dealer and agency contacts of the Bell & Howell film distributing system were transferred to United World Films.

The producers of Coronet Instructional Films desire to contact amateur and professional motion picture photographers who would like to have their 16mm Kodachrome work used in classroom films. They have been impressed by many of the fine color films produced by amateur photographers and would like to offer them the opportunity for wider distribution of their work.

In order that photographic scenes submitted be acceptable, they must have been shot according to the rules of good motion picture photography. Just to note a few of them; shooting from a tripod, careful exposure,

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pan slowly and steadily, the film must be clean and free of scratches, and shot at sound speed, 24 frames per second.

This program is being initiated by Coronet Instructional Films, as a result of their expanded production program. Many varied scenes are required and it is suggested that those interested write to Coronet Instructional Films, 65 E. South Water St., Chicago 1, Illinois, advising them what they have available and await their further instructions before submitting footage.

THE BUILDING OF A TIRE is a new Walt Disney Technicolor production that has just been made available for free showings on 16mm sound screens. Through ingenious treatment, Walt Disney and his staff take the involved process of creating a tire and make it not only fascinating, but easy to understand.

How the everyday materials of rubber, rayon or cotton, and steel wire are converted into a tire of tremendous strength and durability on which our very lives depend, is graphically shown in this unusual film produced for the Firestone Tire and Rubber Co. Rendered in beautiful Technicolor, one sees 28 minutes of animated drawings, diagrammatic sketches, and actual color photography of factory, mill and plantation scenes.

The audience is taken into the mammoth machines to be shown just what is happening inside. Giant cutters are slicing bales of rubber as if they were butter, huge plasticators soften the rubber for processing, chemicals unite with rubber in great mixers, and tire parts are assembled and shaped by massive hydraulic rams under terrific pressure.

THE BUILDING OF A TIRE may be had for showing, with no charge being made either for rental or film shipment both ways, from Association Films (Y.M.C.A. Motion Picture Bureau), New York, Chicago, San Francisco, or Dallas.

The first announcement of United World Films, Inc., formation of which has been described in another part of this column, includes the following releases:

SEE MY LAWYER, a hilarious comedy that involves two zany night club performers, Olsen and Johnson, and their comic antics when they try to break their contract so that they





The DINKY BOOM

For Properly Lighting Motion Pictures,
Home Movies, Portraits and
Table-Top Photography

Something has been added... at the request of Hollywood Camera Men... to the Bardwell & McAlister line of Photographic Lighting Equipment... It's the Dinky Boom!

On motion picture sets, among the home-movie fans, and everywhere that fine photography is produced, the Dinky Inkie, that handy little 150 Watt Spot, has been standard equipment. Now its use has been made much more flexible by the Dinky Boom which makes an infinite number of lighting arrangements and angles easy to obtain. The Dinky Boom comes equipped with a standard Dinky Inkie Spotlite.

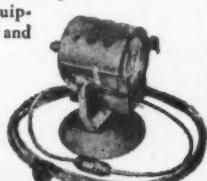
With the Dinky Inkie you can highlight portrait subjects by concentrating a smooth, graduated light exactly where it belongs. You can get the greatest degree of flexibility in modeling close-ups. You can eliminate shadows in dark corners and virtually "paint" with light that is under control at all times.

For fine photography there is nothing better than Bardwell & McAlister Lighting Equipment. For good work, the Dinky Inkie and the Dinky Booms are "musts".

This wonderful little spot operates with 150 watt T-8-DC globe, focuses from an 8 degree spot to a 44 degree flood. It has the same back and front handy focusing lever as the Baby Kog-Lites. With base removed, it fits any stand and tripod. Total weight 2 1/2 pounds.



Address Inquiries to Dept. 22-27



Write for literature describing the Bardwell & McAlister line of Photographic Lighting Equipment. There is a light for every possible need. Ask about the Senior 3000-watt Spot, the Junior 1000-2000-watt Spot, the Baby Kog-Lite 300-750-watt Spot, the Single and Double Broads, the Face-Spot, Endots, Barndoors and other light control accessories.

Check These Features

THE BOOM

- 1 Maintains constant angle of adjustment in all positions up to 45° angle from vertical.
- 2 Boom has telescoping extension.
- 3 Thrust bearing with fibre friction disc or balance point holds boom rigid in any position without making thumbscrew adjustments.
- 4 B & M folding-leg-type stand.
- 5 Nine foot six inch optional base.
- 6 Weight 17 pounds.

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SPECIAL NEGATIVE DODGING EFFECTS
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may go to Hollywood. Slapstick, as only Olsen and Johnson can be slapstick, it should have your audience rolling in the aisles soon after the start. Deftly screened from the Broadway hit, it features six top tunes, Olsen and Johnson (as if you didn't know by now), Alan Curtis and Grace McDonald. Allow screen time for seven reels and book under No. 2648, GHYJ. The usual rental of \$17.50 is asked.

THAT'S THE SPIRIT deals with the materialization of a ghost, a happy-go-lucky gentleman who comes down to earth to re-adjust the lives and affairs of some former relatives. It will have you wistful, whimsical, boisterous, and belligerent, but never bored for the bright



musical drama has a fantastic twist that keeps the action flowing every moment. Jack Oakie and Peggy Ryan, the gay father and daughter of the MERRY MONAHANS, team up with gravel-voiced Andy Devine, June Vincent, and sober Arthur Treacher to provide nine reels of gloom chasing. The rental price is \$17.50 for this production known as No. 2657, GHYJ.

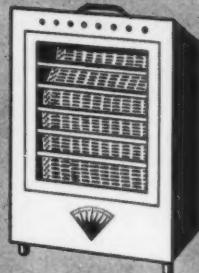
ILL TELL THE WORLD shows what happens to a radio fast-talker, who becomes an "Advice to the Lovelorn Philosopher," when he gets into difficulties with his radio-struck girl friend. Lee Tracy has the lead and Brenda Joyce provides the heart interest while June Preisser and Thomas Gomez are in supporting roles. The catalogue number on this one is No. 2655, GHYJ, the length is six reels, and the rental \$17.50.

PENTHOUSE RHYTHM is a carefree musical comedy that deals with the efforts of a group of talented young people striving to attain professional recognition. Amusing complications thwarting their eventual success are humorously developed in this comedy which features a musical score of special songs. Kirby Grant, Lois Collier, Eric Blore and Slapsy Maxie Rosenbloom head the cast. No. 2690, GHYJ, six reels, rental \$17.50.

All of the above films, of course, are Universal Productions.

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Perfect Safety
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CHEST**
Wood Construction
With Safety Catch



\$7.50

The WILLO Dark Room Storage Chest affords a safe, convenient place for a long-time supply of sensitized paper. Keeps paper free from light, dust, and dirt. Eliminates danger of fogging. 4 Shelves accommodate 2 gross each 5x7 and 8x10 paper.

Inside measurements:
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EASEL**
"All Metal"



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TONING ----

(Continued from page 37)

you would prefer that they be highly toned. For this wash bath, a sink or lavatory basin may be used as the amount of color washing off is very slight and will not cause any stains. If no running water is available, a series of changes of still water will do the trick just as well.

Now that films are toned and washed, they should be wiped with a photo sponge or piece of chamois and hung to dry in a dust-free warm room. The simplest method of hanging film is to insert paper clips through the sprocket holes about every 2 or 3 feet and then hook these clips onto a light line stretched across the room so that the film hangs in loops. Normally, unless the weather is very humid, film will dry in an hour or two and even less on a warm summer's day. The film is now ready to be spliced into the reel. Different colored scenes may thus be combined on one reel for unusual and startling effects.

You will remember I mentioned earlier that these toners are capable of being combined to produce intermediate shades. This may be accomplished in two ways: A half ounce of brown toner and a half ounce of red toner may be added to a pint of water to make a bath that produces beautiful coppery tones. I used such a bath to tone pictures of Indians I made down in Mexico and Guatemala. The results were truly astounding. The other method of reaching these middle tones is to make up two separate toning baths, one red and one brown, and then tone for a short time in each, going back and forth until the desired shade is reached. While more complicated, it permits a wider variation of shades. After these combination or multiple toning jobs, films are washed in the usual manner to remove excess dye from the highlights.

Quite by accident, our laboratory has discovered a chemical means of expediting the highlight clearing of the blue and green toner. No other colors respond to such methods but the green may be

LENSSES AND SHUTTERS—used on most American-made still cameras. Below: 135mm f/4.5 Wollensak Velostigmat lens mounted in new Wollensak Synchromat. Below: new Shutter (with built-in synchromatization).

MOTION PICTURE LENSES—standard equipment in American-made 8mm and 16mm motion picture cameras. Left: the 1" f/1.5 Wollensak Cine Velostigmat lens.

ENLARGING LENSES—being produced for leading American enlargers. Below: 3½" f/4.5 Wollensak Enlarging Velostigmat.

PROJECTION LENSES—for still and motion picture projectors. Above: 2" Sunray Projection Lens. Below: 107 f/1.6 Wollensak Projection Lens.

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Today Wollensak is turning out the largest number of lenses and shutters in its history. To help you get your new photographic equipment sooner, Wollensak is shipping practically all its lenses directly to leading American manufacturers of cameras and projectors. That means the equipment you and thousands of photographers are waiting for can be completed *faster*.

You'll notice the name "Wollensak" on the lenses of many of the fine new cameras, enlargers and projectors arriving at your dealer's these days. Some of this new equipment features a Wollensak lens, even though the name "Wollensak" may not always appear on the lens.* In either case, your Wollensak will contribute much to your pleasure in your new equipment... help you get more fun from photography. Be sure your new camera... enlarger... projector... are Wollensak-equipped.

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KORONA WIDE-ANGLE-BINOCULAR**

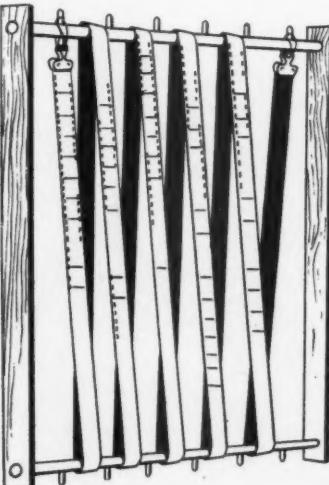
Leaders since 1884 in quality optics. On your photographic lens, view camera, binocular, tripod, studio stand, multiple or reducing back, these names mean quality.

Ask your dealer—he knows quality.

washed clean in a very short time if the film is immersed in a tray containing a pint of tap water to which has been added a pinch of sodium bisulphite. The blue toner may be washed out of the highlights more quickly if a pinch of sodium carbonate is added to the wash water. If this is not available, a few soap suds will do the work as it is the alkalinization of the water that does the job.

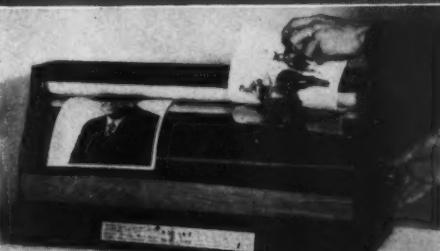
Lengths of film up to 5 or 6 feet can be handled without any trouble by this simple tray method of toning. The film is simply placed in a loose coil in the tray so that it is completely submerged and the tray itself is gently rocked so that even toning results. You will find that most scenes are 6 feet or under, so most of your toning can be done in this simple fashion. Longer scenes may be done in several installments although there is always the danger that colors will not match exactly.

A better method is to build a little wooden frame as shown here and use it for longer scenes. Make it about 8 by 12 inches overall so that it will fit into an 11 by 14 tray. Use no nails as these will rust. Stainless steel pins should be used to hold the film strips apart on the ends of the frame, or, better yet, little wooden pegs may be employed. Fasten one end of



Easy to use

JUST TURN THE KNOB



LOTT "PROFESSIONAL"

24"x28" Chromium Drying Surface

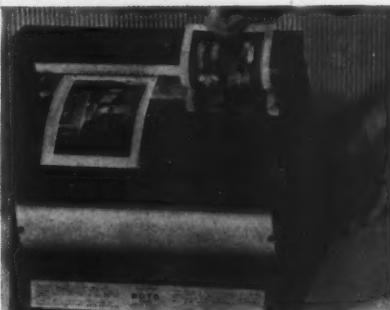
The ideal ROTARY DRYER, built to turn out prints in a hurry. Prints dry straight and even in 4 to 8 minutes. The heating element provides constant temperature—prints can not burn or scorch no matter how long dryer is left "on." Uses only 300 Watts on 115 volts AC or DC. Weighs 24 lbs. Dries 16—5"x7" prints at a time. 5 years tax year guarantee.

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12"x28" Chromium Drying Surface

The Lott "Standard" Rotary Dryer is built on the same principle as the "Professional" except smaller. Prints are placed on the drum in the same way with the pre-shrunk canvas pulled over them with a turn of the knob. Uses 180 Watts on 115 volts AC or DC. Dries 3—8"x10" prints at a time. Weighs 12 lbs. Guaranteed for 5 years.

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 18 EXP. ROLL 75c

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 Remit with order—Save C.O.D. charges
 FREE—Send for New Folder & Mailing Bag

DEVEL PIX

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the film to the frame but use a rubber band between film and frame on the other end as the film will expand and contract during toning and washing; if it is made fast at both ends it is likely to break. This little frame will handle up to 18 feet of film and may be made easily with a few pennies worth of dowel rod.

As you can readily see, toning your black-and-white movies is a simple and inexpensive procedure. Color toners are available at most camera shops. Diluted toner may be used again and again. As the dye is deposited on film the solution becomes weaker and then should be discarded. Diluted toner should be stored in a tightly capped brown bottle and in this way may be kept for some time. For good results, never mix used toner with a fresh solution.

Toning colors the emulsion of the film but any discussion of toning also suggests tinting. Tinting colors the celluloid backing or base of the film. Prior to the war tinting came into vogue especially among producers of entertainment films. You may recall sequences in which Jeanette McDonald appeared in the twilight singing in a scene where the prevading effect was a golden haze; or an interior sequence where a copper or blue tinge keyed the mood. These scenes were printed on tinted film called commercially "firelight," "purple haze" or "sunshine."

Tinting has been combined with toning. For example let us take a scene of sailboats scudding into a sunlit harbor. We have our film developed to a negative (if it is not exposed on negative stock), and specify that it be printed on "sunshine" positive film. When projected the whites will appear to be struck with sunlight; light greys will come to life and glare will be gone. To complete the effect we can now tone the emulsion (the darker areas) blue as described above, and we have much of the full beauty of the original scene—blue waves, bright sunshine—brought to our screen. Printing a sequence on tinted film, besides setting a mood, also gives tonal balance or evenness to the se-

quence. Contrast between scenes of different density is cut down and an overall harmonious effect achieved.

The method of dyeing to secure a tinted effect was discarded in favor of printing on film with the dye already in the base. At present a few independent film laboratories have small stocks of tinted film on hand; the larger film manufacturers are hard pressed to supply the demand for black-and-white and full-color films. But with the return of other film in quantity, tinted film should become available too. Meanwhile, now that winter is here, and you have plenty of time for darkroom work, see for yourself how easy it is to add brilliant color to your black-and-white movies by means of toning.

PHOTO MARKETS

(Continued from page 14)

The Home Craftsman, 115 Worth Street, New York 13, New York, are interested in receiving pictures showing remodeling of homes done by the home owner himself. Preference is for "before" and "after" views. Only black and white desired. Write to Mr. H. J. Hobbs, the Editor, for further information.

American Fruit Grower Publishing Company, 1370 Ontario St., Cleveland 13, Ohio, are in the market for photos of fruit *on the tree*—close-ups. Also good tree photos. Like to have varieties of fruit identified. Also need good picking pictures, and good processing pictures—canning, juice making, etc. Pictures of people working in orchards. Payment depends on size and quality of photos. Very little color is bought, but for exceptional work the price for color is \$10.00.

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A superior new contact paper with all the desirable characteristics of a fine chloro-bromide enlarging paper.

**Not a blue black—Not a brown black
But a TRUE black**

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But a PURE white**

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Eastman - Ansco
Dupont Film

PRICE

69¢

35 EXPOSURES

35mm FILM

LAST WORD

(Continued from page 12)

• **Aerial Photography For Fun And Profit** by E. B. Van Winkle in the Sept.-Oct. MINICAM prompted Mr. A. Esposito, who does not profess to be an authority on the subject, to state his own theory that slow shutter speeds insure better depth of focus in aerial photography than fast shutter speeds. Because of Mr. Esposito's sincere desire to know whether other amateur photographers agreed with him, we invited comments. 93% of those who wrote disagree with Mr. Esposito. Here are excerpts from as many letters as space permits:

Sirs:

As an Army Air Force photographer for four years, I took aerial photos with all kinds of cameras and in all types of planes. Though I have shot good pictures at speeds of 1/100 sec. in the air, Mr. Van Winkle is correct in stating that speeds of 1/400th sec. should be used as a rule. Slower shutter speeds will net the photographer a great many poor negatives. In aerial photographs. Using an Eastman Kodak at infinity, so there is no reason why depth of focus should be a problem.

JOHN LANDGRAF,
2905 You St., Sacramento, Calif.

Sirs:

Though a locomotive fireman, I have also been a pilot since 1930 and have made many aerial photographs. Using an Eastman Kodak 620, as well as two 35mm. cameras and a 16mm. movie camera, I have found that on a clear day a shutter speed of 1/100 sec. at F:11 on pan film will give excellent results. Please print Mr. Esposito's address. I'll send him some negatives if he wishes, or give him any help I can.

R. S. COPELAND,
Conneaut Lake, Pa.

Sirs:

With Army Aerial Photography as my background, I am inclined to agree with Mr. Van Winkle that fast shutter speeds are preferable. Fast shutter speeds eliminate the danger of blurring from plane vibration. A fast shutter speed plus a wide-open lens will give excellent results.

W. O. ZAMRINO,
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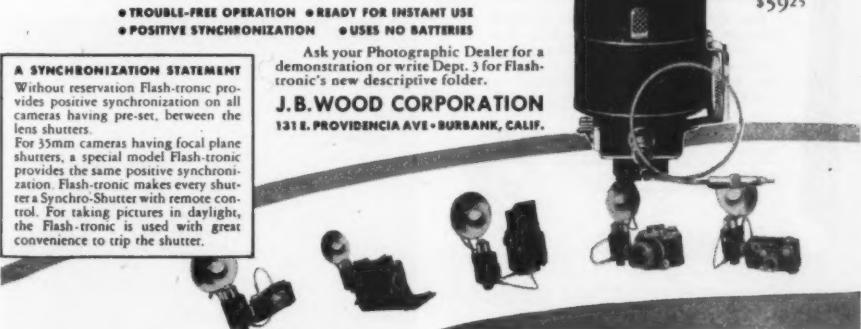
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Sirs:

In making literally hundreds of aerial shots, I have found that 1/200th second was the slowest speed allowable in a Piper Cub plane. In a faster plane, the exposures would certainly be about what Mr. Van Winkle suggested.

H. B. SMITH,
108 Temple Rd.,
Oak Ridge, Tenn.

Sirs:

I wish to align myself with Mr. A. Esposito. I have made several good Kodachrome transparencies from a commercial airliner with an Eastman Bantam camera at 1/25 sec., F:5.6.

ARTHUR GOLDSTEIN,
P. O. Box 239,
Madison Sq. Station, N. Y.

Sirs:

Detail and clarity is a must in good aerial photographs, and I find that they can not be obtained with slow shutter speeds due to vibration. In short, I disagree with Mr. Esposito.

GERALD FIKE,
Baraboo, Wis.

Architectural Scale Models

Sirs:

I have been trying to photograph an architectural model built on the scale of 3/16ths. inch to the foot. Have been using a 4x5 camera with a 6" lens, but somehow the lines of perspective do not seem to be right. A local photographer said the model should be photographed with a long focal length lens. Can any of your readers advise me on this problem?

L. LATHROP,
P. O. Box 57,
Hollywood, Florida.

What, No Boarders?

Sirs.

I am submitting this 8x10 print to show you what can be done with an enlarger in a sixteen foot house trailer—after shooting the wife and dog into a corner and assembling the enlarger piecemeal from its storage space in various cupboards and drawers.

C. W. POOR,
3414 San Fernando Rd.,
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Axel's Angles

(Continued from page 75)

This is a non-constructive approach. The best habit one can acquire is that of accepting the challenge of a good idea, figuring out how he can carry it through, and doing so! One idea put into execution leads to another and still another; one good idea rejected by a negative attitude means that half a dozen ideas may never come to life. With anything other than the positive approach, a photographer merely vegetates.

Finally, having acquired an idea and the incentive to follow through on it, a photographer should cultivate the ability to simplify. Too many photographers make too many pictures too complicated and cluttered up. Mastery of the third ingredient of good pictures hinges upon simple, direct translation of an idea into a print.

Figure 1.

This photograph illustrates well the points I have tried to bring out above in connection with technique and simplification. Enough of the actual door was

FIG. 2

Hugh Morris





FIG. 3

A. Horvath

shown to indicate its type and character; the painted brick and rough stone steps serve to suggest the type of residence. The shadows on the door indicate landscaping, the column suggests the portico, the vase shows pride and taste, the masses balance, the light and shadows are harmonious. What more could one ask for in a picture?

Figure II.

This picture also carries out well the points I have discussed. It has nice lighting, simplicity, and good photographic technique. The bottom of the print, however, should be trimmed (as marked) to result in a horizontal composition. If it were trimmed a little at the right side and top also, the full impact of the idea would be expressed with even greater simplicity.

Figure III.

As can readily be seen, a basically good idea in this picture was not simplified enough. The two corn shocks on the left outweigh the rest of the picture, and draw all the attention. By cropping away a good portion on the left, the eye leads in to the center of interest and is held within the picture area by the right hand shock which tends to frame and balance the picture. By way of still further improvement one might wish that the picture had been taken at an hour when the corn shock on the left did not catch quite so much light.

Figure IV.

Every home has a window in it that presents picture possibilities. In this pic-



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FIG. 4

D. E. Kirkpatrick

ture, which illustrates but one of many possibilities, it is evident that the photographic technique employed was a little deficient. It should have been possible to balance the inside light so that just a shade more detail outside the window would be evident. Moreover, this type of picture requires careful cropping in order to bring out its full pictorial value. Assuming that the vase is our center of interest, the distance from it to the four sides of the print should all be different, as I have suggested in previous articles. In other words, the center of interest should rarely be placed in the dead center of a picture. The curtain rod should be cropped away for the simple reason that it adds nothing to the picture.

Figure V.

This picture came close to being very nice, but as always it is the small, subtle details which either make or break a print. It is a well-known fact that the eye always leads into a picture from left to right the same as it travels from left to right in reading printed matter. Therefore, if the subject figure had been placed



FIG. 5

Otto C. Keller

in the upper right hand area, the picture would have been much more striking. The eye would then enter the print from the left and naturally, without effort, travel along the folds in a visually pleasant curve to the figure which repeats within itself that very same movement of the eyes. Finally, if a piece of smooth material of oriental character which harmonized with the figure had been used, the picture would have been greatly improved.

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Book Reviews

EVERETT A. HOUGHTON

FREE LANCE PHOTOGRAPHY by Townsend Godsey. Duell, Sloan & Pearce, \$4.00.

AFTER THREE unsuccessful hitches at making a living as a freelance photographer, Townsend Godsey, an author well known to *MINICAM* readers, packed up his family and photographic gear and lit out for the Missouri Ozarks where he swapped pictures for pancake flour. This was to be his final bid for the kind of existence which seemed most desirable to him—and it paid off. *Free Lance Photography* has to do with the things he learned along the way, and with the pitfalls he might have avoided had someone else written such a book as this before him.

A combination of autobiography and simple technical explanation, *Free Lance Photography* is the type of instructive manual that any photographer can enjoy whether he be professional, amateur, or a Brownie snapshooter. At the same time it is complete in its coverage of the problems which face a free lance photographer—the question of markets, the types of pictures most marketable, and the copyright. Even in the more technical discussions concerning methods of processing negatives and prints so that they measure up to editorial demands, Godsey has managed to keep his writings simple. It is difficult to think of a single question facing prospective free lance photographers which is not adequately covered in this 250 page, liberally illustrated, book. In short, Godsey drops enough helpful tips on photography in general along his margins to make the volume worth the money.

CAREERS IN PHOTOGRAPHY by C. B. Nebblette. Ziff-Davis, \$2.50.

MANY amateur photographers upon reaching a point in their development where the darkroom and camera threaten to absorb more than a normal share of their time, toy with the idea of making a career of their hobby. Some of our best professional photographers have risen from the ranks of the amateur for the simple reason that we do best that which we most enjoy doing. It may be that you, if you possess the necessary qualifications, should be thinking of photography as a career.

C. B. Nebblette, author of *Careers In Photography*, is administrative head of the department of Photographic Technology at the Rochester Institute of Technology, and is in a position to answer most of the questions involved in this step. In a concise but thorough manner, he examines the whole field of photographic work from portrait and press photography to photomicrography and spectrography. In outlining the potentialities within each field, and in discussing the training neces-

sary to obtain positions in the respective branches, he places emphasis on the fact that photography is rapidly advancing from trade to profession, that competition is keen, and that thorough training and a period of apprenticeship are absolutely necessities.

Neblette has resisted the temptation, common to this type of work, of painting a rosy picture of the prospects within his profession. He faces the facts, tells of the obstacles, and most importantly, shows how they may be overcome.

If the reader wants to go on languidly dreaming of a photographic future, he should skip this one. However, if he seriously desires to know how that future may be obtained, this book can be a valuable instructor and guide.

THE AMERICAN ANNUAL OF PHOTOGRAPHY, 1947. Edited by Frank R. Fraprie and Franklin I. Jordan. American Photographic Publishing Company. Price \$2.00.

IT USED to be that the compiling of a representative selection of a year's work in American photography was a comparatively simple job. Not so today. The tremendously increasing number of artists within the field, the technical advances which have made available an ever widening range of subject matter, and the broad dissemination of information on technique which has made technical excellence a thing to be taken for granted, have made the task of the photographic anthologist constitute something more than that of simple elimination. It is obvious that any photographic summary of the year's work must be in good part a product of the editor's taste. Since the photographic judgment of this year's *American Annual* editors, Frank R. Fraprie and Franklin I. Jordan, is acknowledged, Volume 61 in that series contains some of the better products of 1946.

Whether or not the selection is precisely representative is controversial because the prints are chosen from *American Photography's* annual competition. But for the statistical-minded it might be mentioned that of the sixty-odd full-page prints in the salon section, over a third are portraits while only one is a still life. From this it would seem, that whereas the human face lends itself to an infinite variety of artistic expressions, the fresh approach to the still life becomes increasingly rare. For the statistical-minded also, is the usual "Who's Who" of pictorial achievement in the back of the book. Although the appeal of any review depends largely upon individual taste, it is likely that of the ten articles included the one on "Photography of the Nude" by P. H. Oelman, will rank high in popularity. Interesting, informative, dignified, and artistic, it presents such concise treatment of a difficult subject that the editors should be congratulated for finally getting Oelman to say in print what he has been stating for years to photographic groups.

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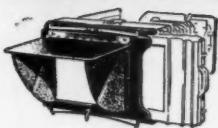
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**THE LONG AND THE SHORT
OF LENSES**

(Continued from page 67)

fill their negative with a large head shot without adding size to that part of the face which is usually closest to the camera and can't often stand any enlargement, the nose. The long lens seems to add roundness to the subject, enabling the camera to apparently see "around" more, although at the same time it appears to add weight for the same reason.

Other obvious advantages are that by covering less of an area they bring distant objects closer without a change in the camera view-point, frequently a convenient attribute and sometimes downright necessary. They are to the camera what binoculars are to the eye. More than this, they can be made to apparently bring widely separated objects into closer relationship with each other. For example, you want to picture a farm, but find that the buildings are so scattered that they lie too far apart in the picture, and those in the foreground are so much larger that they completely dominate or perhaps even hide those behind them. The solution here would be to slip on a long lens and from a more distant viewpoint get the farm buildings in closer relationship with each other, and in a more uniform size.

Still another distinction of the longer lens is the more shallow depth of field. At first glance you'll think I'll have to admit this is a disadvantage, or else contradict what I've already said, but neither is so. Here again is an opportunity for the alert photographer to make this serve his own wishes. That "sharp" look which is so characteristic of Graflex-made pictures derives from the fact that a Graflex is invariably fitted with a longer than normal lens, usually operated at a wide aperture which stands the subject in bold relief against the soft background. Suppose you are photographing a statue in a park with an average lens, but the picture is unsuccessful because the building in the background competes for attention with

the subject. One way to overcome it would be to use a longer lens, stepping back to get an image of the same size, and the chances are that the objectionable building will fade pleasingly out of focus. Yet another characteristic of the long lens is that you don't have to get into your subject's lap in order to get a large head shot, but whether or not this is an advantage depends upon who your subject is.

I frequently use my 8½ inch lens on 2½x3¼ film for out-of-doors or studio headshots, and for movie production scenes when I can neither flash nor get as close to the subject as I might want to get, since I have to keep out of movie camera range myself. The long, fast lens gives me large, fully exposed images which often spell the difference between success and failure on such an assignment.

But that's still not the long and the short of it. I also use, on occasion, an 11-inch telephoto, which I mount on my press type camera. Because it requires groundglass focussing this lens is slow to work with, which is a serious handicap in my type of work. Yet there have been a few times when it has produced pictures which would have been impossible for me to get without it, and these few instances have more than justified the expense of owning and the trouble of always carrying with me a lens which I so seldom use.

The fourth lens? Oh, it's just the normal four-inch lens which came with the camera. It's kicking around in the bottom of my camera case somewhere. I carry it with me chiefly to use as a burning glass to light my pipe when I've run out of matches. It's a dandy focal-length for that, I've found, but not much good for pictures.

You may already have the desire to experiment with various lenses, but find them hard to get at the moment. The day's not far off when they'll be back, available to all again, and better than ever before. But in the meantime don't postpone your fun by being one of those who say, "Only the best is good enough for

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me, so I'll just wait." Don't overlook those old, despised rapid rectilinears which even now clutter most dealers' shelves. They are not suitable for color and may not be fast enough for the speed-crazed neophyte, but for most practical purposes they are more than adequate, at least to play around with until better ones come along.

Whatever its make or type, pick up a lens either moderately shorter or a great deal longer than your camera's regular equipment. Then try many shots, the one against the other, just to exploit the possibilities. I promise that this will open up new photographic worlds to you, and I believe that once you've started experimenting and see what exciting pictures you can get, you'll never go back to the single standard of one lens, the one average lens for just average results.

GENESIS OF A SALON PRINT

(Continued from page 59)

strokes were made on the road to simulate cart tracks.

The method by which oil paint and pencil is applied to a print is relatively simple. If a mistake is made the color can be removed with a swab of cotton dampened in turpentine and the work begun all over again on the same print. Inasmuch as all handwork will smudge rather easily if touched before it is hard-dry (which generally takes a week), it is a good idea to start at the top of a print and work downward.

Since the surface of matt bromide paper does not take oil color or pencil satisfactorily without first being treated, an oily dope must be applied to the paper before alterations are attempted. Ready-made dopes are available at most art and photographic stores; if you prefer to make your own dope, mix equal quantities of megilp and linseed oil. To apply the dope, swab a little of it evenly over the surface of a print with a plug of cotton, then rub it away with other swabs of cotton until no trace of the application can be seen when the print is held sidewise to the light.

When all smudges or oiliness have been removed from the print, it will readily take either oil color or pencil. These can be applied with either a $\frac{1}{4}$ -inch artist's hog's-hair brush or a stomp. The merest trace of pigment will suffice and there should be no attempt to "paint" on the print. The colors—which should, of course, match those in the print—are simply smudged on to deepen the tones of a shadow, or degrade a tone that is too light.

Small white spots can be obliterated on a doped surface without showing by means of a pencil point. Where a large expanse of the print is to be degraded by means of oil color, a small plug of cotton should first be rubbed in the pigment and then rubbed in a circular motion on a piece of white paper until it produces an even tone. The swab is then ready for use on a print where it is again applied with a circular motion. Instead of applying pigment to small areas, some workers swab an even tone of color over the entire print, afterwards removing it from areas that should be lighter with pledges of cotton damped in turpentine. It will pay you to try both methods, for with skill that comes with experience you will soon find it within your power to improve some prints to an unbelievable degree. You may even discover in your files a handful of "straight" record prints that are actually salon prints in the rough. Why not have a look?



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EXPOSURE - DEVELOPMENT RELATIONSHIP

(Continued from page 52)

objects inside rooms. Also on a distant view of countryside that does not include prominent foreground objects, and on other occasions when light intensity and color differences in the subject matter are very slight. This technique can also be used on normal or even harshly lighted scenes, in order to further exaggerate a hard, dramatic effect.

How Does It Work?

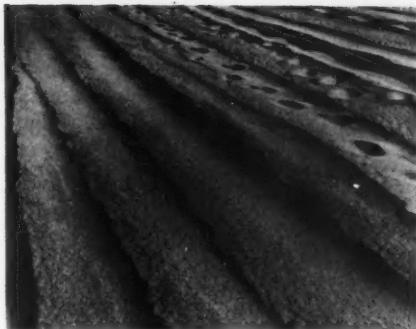
Recalling our statement that if there is any illumination whatsoever on a subject, there will be differences in intensity, it is our job to place those tones toward the foot of the H. & D. curve of our exposure, so that some of the tones that might have registered as low-middle tones are now down into the shadow portion of the curve. Then, by extending the developing time, we cause a maximum development of the true middle tones—affecting them in much greater proportion by the lengthened development than we do those tones which we have caused to fall into the shadow ranges.

If we keep in mind the maxim about contrast and density, we discover that inasmuch as our density is largely controlled by exposure, we need have no fear of our negative becoming blocked-up due to the over development. With contrast being controlled by development, we can be reasonably sure of getting a brilliant print from weak or flatly lighted subject matter by under-exposure and over-development.

To What Extent Can This Be Done?

There was a farmer once who had a nervous breakdown every year when it came time to sort potatoes. When the doctor finally investigated, the farmer admitted it wasn't because of the work involved; it was "making the decisions" that drove him nuts.

That's about the way it is with this. One simply has to work along until the



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feeling is developed for just how many stops to cut the exposure, in conjunction with how many minutes to increase the developing time.

I use a range of between $\frac{1}{2}$ to $1\frac{1}{2}$ stops or equivalent in shutter speed below the normal setting on the meter—depending on the degree of weakness or flatness of the lighting. This, of course, is in conjunction with an increase in developing time. With a 10-minute developer, for instance, I sometimes run the developing time up as high as 14 to 16 minutes. (Note: When using the green light with extended development, extra precautions must be taken to make sure that the negative is inspected for very short intervals.)

Just as the Water Bath method was a sort of super-extension of the Overexpose—Underdevelop procedure; let me introduce Gamma Infinity, who handles the special cases in the weak and wish-washy light department.

DEVELOPMENT FOR GAMMA INFINITY

How It Works.

This is a rather tricky procedure and it is best to make several, varying exposures to make sure of your results, because you must hit it right on the button. It is only used on a subject matter such as "Gargoyle," where even the mild Underexpose—Overdevelop method would be of no

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avail. We set our reading just 1 or 2 stops within the U on the Weston meter. In other words, we are barely getting a recording on our film of the over-all reading, and the myriad, little shadows that we know are present, are dropped completely out of the scale of the film. As you can imagine, this is a very ticklish part of the curve in which to place your highlights. I have made tests where one film emerged from the hypo practically clear blank, and the next one, which was exposed one stop more, would print easily on No. 2 paper. A third film exposed one more stop would be practically opaque.

For development, any average working developer will do, such as those mentioned previously. The developing time is just what the name of the process implies; i. e., infinity—or such time as it takes for the developer to effect the maximum amount of reduction. I have found that with developers such as D-76 this takes approximately 1½ hours; with DK 60A type developer 45 minutes to an hour is sufficient.

It is desirable to use fairly old developer with Gamma Infinity since part of the process' effect is due to a plating action of silver on the highlights.

What About Agitation?

Agitation is carried on normally for the developer's normal working time; and once every 10 to 15 minutes from there on in. This is to cut down the possibility of fog through excessive oxidation.

The results from this procedure are truly amazing when handled properly. The highlights will be full of gradations and brilliant textures; the shadows are crystal clear and the middle tones are strongly separated.

To summarize the above general principles:

1. If we expect to extract the maximum possible quality from the photographic process, we should learn to control that delicate balance of contrast and density in our negative which is a product of the Exposure—Development Relationship.

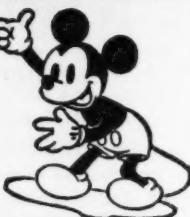
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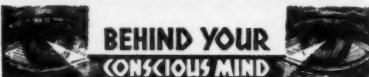
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PRINTON

(Continued from page 24)

and a UV-16P filter in the optical system, however, the correct exposure can readily be determined by making test strips. Expose the test strip in 1, 4, 16, and 64 second steps. Since you will develop the test to such a low contrast, there is a great increase in exposure latitude. Test exposures in multiples of 4, rather than the usual multiples of 2, should be made.

If you expose for the highlights (incidentally, this is usually the best policy), the shadows may become blocked. You will find your brightness range coincides at the top (as it should), but that the longer range tends to fall down in the shadow areas. You can match the transparency brightness range in the middle tones, but it will stretch out over both ends of the print range, yielding thin highlights and black shadows. If you expose for the shadows, it is done at the expense of the highlights.

When the correct exposure has been ascertained and the sheet of panchromatic masking film has been exposed, it should be developed in Ansco 17 at 68°F. for exactly three minutes. (Developed to a Gamma of about .3 or .4—or with a maximum density of .5 or .6.) After development the film goes into short stop and fixing bath as usual. When washed and dried, your single mask is finished.

Registering The Mask

When perfectly dry, the processed mask should be taped in register to the transparency. The easiest way to do this is to begin by trimming the mask so that two of its adjacent sides are about $1/4$ " in from the transparency's outside edge. Next the transparency should be fastened with scotch tape to a viewer or a bright window, emulsion side toward you. It is then a simple matter to register the mask, taping it to the transparency by the two sides trimmed for this purpose. Accuracy is best insured by paying partic-

ular attention to the registration at the edges. When the assembled mask and transparency have been removed by tracing the edges taped to the glass with a razor blade, it is ready to be used for printing.

The Unsharp Mask

Inasmuch as the mask was processed following its exposure, certain dimensional changes are inevitable. This often causes later trouble in accurate registration of the mask due to shrinkage. The easiest way to overcome this is by making an unsharp mask by rotating the tilted printing frame during exposure so that the exposing light strikes the transparency from all directions. An opal glass may also be used between the light source and the printing frame for additional diffusion.

Since the unsharp mask has softened delineation between objects in the view, the slight registration inaccuracies caused by unequal swelling and shrinkage will not be apparent even under close inspection.

The Double Mask

For transparencies containing excessive contrast, further compression of the brightness range may be obtained by using the double masking technique. This method keeps the Printon whites clean while allowing an increased amount of masking. The process is identical to the single masking technique, with the addition of one extra step.

This step involves making a preliminary mask on a high contrast film. With an appropriate film such as Reprolith in the printing frame, exposure should be made only for the highlights. The film should then be developed to a high contrast by immersion in a high contrast developer such as Paralith for 2 minutes. After complete processing, the mask should appear almost clear, save in the extreme highlight areas where there should be a density of 0.5 or less. With this preliminary step accomplished, a final mask is made as previously described on a panchromatic film by exposing this film to

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light coming through the transparency in register with the original high contrast mask.

Throughout the exposure of the second mask, the purpose of the first mask has been to hold back the brightest areas in order to produce added reduction of overall contrast. Upon completion of the second mask, the first high contrast mask has served its purpose and may then be discarded.

As a rule, the basic single mask will usually furnish all the condensation you will want for contrasty transparencies. But though the single masking technique takes only about 15 minutes after you are familiar with the process, careful attention to the three minute developing time is extremely important. As a final word of caution, do not attempt great alterations of color rendition through controlled filtering of the mask—this almost inevitably leads to disappointment. Stick to the masking procedures described above, concentrate upon accuracy in your development and exposure, and your color prints will be better than you ever anticipated!

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MODEL NIGHT

(Continued from page 19)

Although *Wood Carver* is but one of many color and black-and-white character portraits that photographer Dr. I. W. Schmidt has nudged into prize winning and income producing brackets, all monies received from his pictures go either to his models, or to charities. Strictly an amateur photographer—and determined to maintain his standing as such—"Doc" Schmidt is very independent in his lighting methods. Traditional lighting set-ups are bounced out the nearest window the second they fail to produce the effects he has in mind. Many of Dr. Schmidt's prize-winning pictures are shot with a Rolleiflex camera; *Wood Carver* was made with a Speed Graphic, 4 seconds exposure at F:11.

Douglas H. Wanzer of Springfield, Massachusetts, made the "Cossack Girl" shot in a small amateur studio. A large green window shade served as the background, and two spotlights were used to simulate the natural light from a single candle insofar as possible. One spotlight was trained on the background in back, and to one side, of the model; the other was placed overhead and in front of the model.

Exposure was made according to a meter reading at F:4.5 on 6 1/2x9 cm Type B Kodachrome. The resulting transparency was a trifle dense, so the highlights were lightened somewhat. This was done by bathing the transparency very briefly in a solution containing 10 grains of Sodium Hydrosulfite in eight ounces of water. Sufficient reduction took place in approximately one minute. If allowed to remain in the solution longer, further reduction would have caused the colors and tones to become degraded and false.

Model Night is an invitation to experiment in colored lighting as well as to work with character portraits. Les Tirschel, whose unusual colored light study of a semi-nude appears opposite the title page, enjoys experimental work with colored lighting and is more or less uncon-

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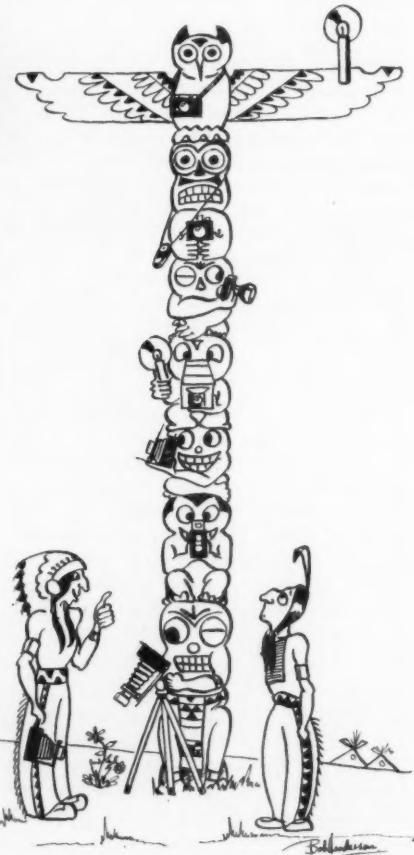
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cerned with the technical side of picture-making. "Color," says he, "should be handled the same as black-and-white and lighted for mood or feeling rather than for the so-called flat, perfect lighting. For this particular picture I was fortunate in having an intelligent, sensitive model who was easy to work with. I consider the model very important, particularly when it comes to intelligence and sensitivity. My light sources were three spotlights, each covered with a sheet of colored cellophane—red, yellow, and blue. I used Kodachrome Professional, Type B film, and the exposure of $\frac{1}{2}$ second at F:16 was calculated with a light meter."



MOHOLY-NAGY

(Continued from page 25)

senting three dimensions on a two dimensional canvas Moholy painted on plastic, bent the plastic under terrific heat, and played a bright spotlight on the work. This experimental departure gave a great feeling of the third dimension, and illustrates the extent of his improvisations.

Walter Gropius, attracted to Moholy's work, asked him to teach at the Bauhaus. Moholy, who was not yet 25 was to be on the faculty with the great names of modern art: Feininger, Paul Klee, Wasily Kandinsky, and Gropius. This was in 1922. The Bauhaus eventually ran into the Nazi regime, and was dissolved. Gropius, who had been the founder and director, was forced to flee to America after he had taken the stand to defend the Mayor of Weimar against Nazi changes.

Moholy came to Chicago, resurrected the Bauhaus and employed first-rate European and American instructors. The new Bauhaus became the School of Design, and then the Institute of Design. Now firmly entrenched in the old home of the Chicago Historical Society, the Institute has 350 day students and 400 night students. Photography is the most popular course. The darkroom, equipped with printers designed by the instructors, also contains 20 enlargers. The new home is in spacious contrast with the institute's former home, the old bakery of the Chez Paree night club. The present school is thoroughly staffed and the enrollment is protected by the GI Bill, which has been a boon to all scholastic institutions.

Moholy's work in photography has been highlighted by a keenly improvisational mind. He is the co-father with Man Ray of the photogram, a medium as rich with potentialities today as photography was 40 years ago. At the end of his days he was experimenting with the effects on photographic film of the rays of light broken by the spectroscope. Moholy was so serious that he might have eaten the first apple if Eve had not eaten it first.

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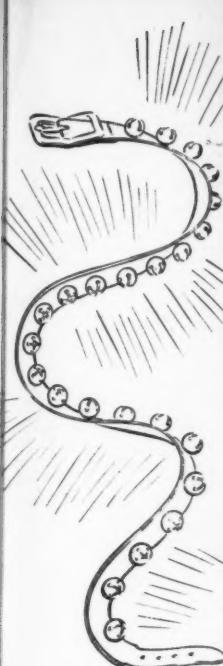
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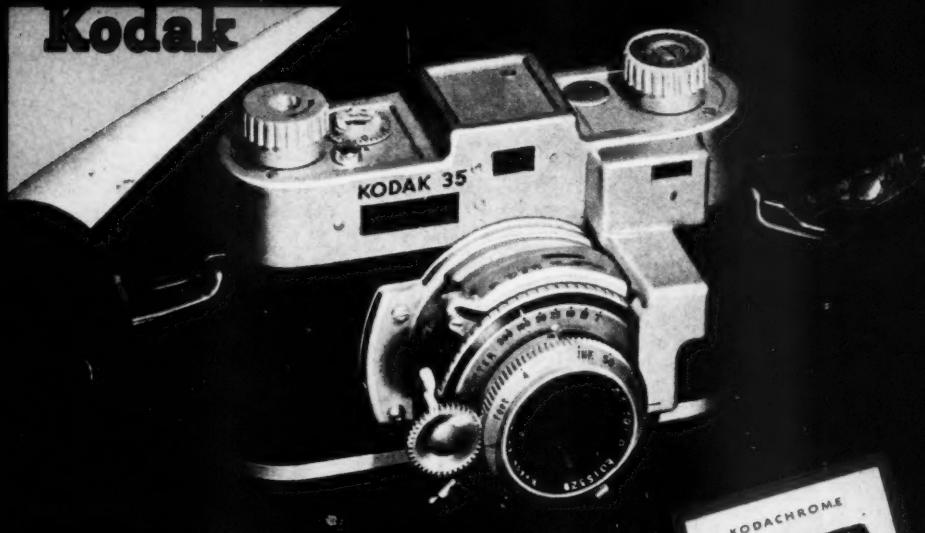
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